

# THE AUTOMOBILE

WEEKLY

NEW YORK—SATURDAY, OCTOBER 1, 1904—CHICAGO

10 CENTS

## AUTO-BOAT CHALLENGE CUP RACES.

THE first auto-boat season in American waters ended last Saturday when the gold challenge cup of the American Power Boat Association was won by *Vingt-et-Un II.* after three days of hard racing. That it was won on merit goes without saying, as the conditions were such as to test seaworthiness and endurance as well as speed.

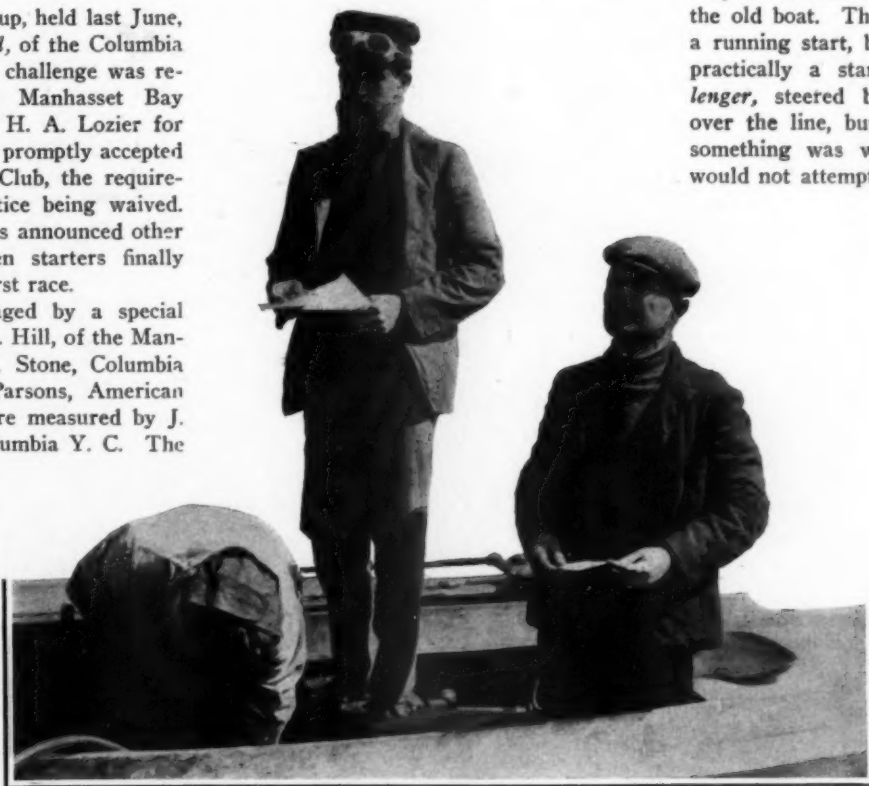
The first race for the cup, held last June, was won by the *Standard*, of the Columbia Yacht Club; and when a challenge was recently tendered by the Manhasset Bay Yacht Club in behalf of H. A. Lozier for the *Shooting Star*, it was promptly accepted by the Columbia Yacht Club, the requirement of six months' notice being waived. As soon as the match was announced other competitors appeared, ten starters finally crossing the line in the first race.

The match was managed by a special committee of three—F. A. Hill, of the Manhasset Bay Y. C.; F. J. Stone, Columbia Y. C., and H. de B. Parsons, American Y. C. The launches were measured by J. H. McIntosh, of the Columbia Y. C. The course was from off the Columbia Yacht Club station, 86th street and North river, up the Hudson sixteen nautical miles, and return—thirty-two nautical miles in all. It was decided to start the launches on their time allowance, so that the first boat in would be the winner. This plan answered admirably, and although it was somewhat tedious to wait for nearly half an hour between the starts of the second and third boats, it was, on the whole, far more interesting than similar waits at the finish and the resulting uncertainty as to the winner.

The start was set for 2 o'clock, but a postponement was ordered until an hour later.

There was a light wind down the river, with the ebb tide, making the water quite smooth. The air was cool for September, but otherwise the weather was favorable

for competitors and spectators, there being many of the latter about the clubhouse. There was some delay in securing a markboat for the turn, this matter being left until the last minute, but finally the cruising launch *Melissa* was sent away with instructions to proceed up the river to a point sixteen miles distant and anchor.



William K. Vanderbilt, Jr., in "Mercedes VI" with Robert Jacobs, its builder, at the A. P. B. A. Challenge Cup Races. Mr. Vanderbilt's generosity has made possible the first great American Automobile Road Race, to be held on Long Island, October 8.

The *Josephine*, an open launch of ordinary construction, crossed the line about seventeen seconds after her gun at 3:05 p.m., and two minutes later came *Marcirene II.*, a staunch and able launch with canopy top in place.

There was then a long wait for the speed boats, the first being the *Flip*, which went over the line slowly a little after the gun. The *Shooting Star* made a standing start, getting away promptly and quickly. Van-

derbilt's *Mercedes VI.* also crossed the line at good speed, and Mr. Tangeman made one of his usual good starts in the *Macaroni*. Bowden's *Mercedes U. S. A.* was slow in getting away, with a standing start, but she soon gathered way and went after the famous old veteran, *Mary Powell*, bound up river just ahead of her; in a very short time she had taken the lead of the old boat. The *Speedway* crossed with a running start, but *Vingt-et-Un II.* made practically a standing start. The *Challenger*, steered by Proctor Smith, went over the line, but it was understood that something was wrong with her and she would not attempt to cover the course.

There was a wait of nearly fifteen minutes after the last start before a dash of spray far up the river told that one of the boats was returning in phenomenal time if she had made the course. The Vanderbilt launch was finally recognized, and crossed the line at 4:54:35 p.m. Mr. Vanderbilt reported that he had actually run some distance past the markboat before discovering her, and returned and rounded her. His elapsed time was only 1:21:30, and very little figuring was necessary to show that this meant a speed of 23.5 knots. Nine min-

utes later came the *Macaroni*; then almost in a bunch the *Speedway*, the Bowden *Mercedes* and *Vingt-et-Un II.*

The wonderful speed of the boats was the one topic of discussion for a time until the word went round that the markboat had failed to reach the proper point in time, and had anchored about a mile short of it on seeing the launches near to her and ready to turn. The times were calculated anew on this basis and given out as official,

and it was not until they had been published the next day that it was discovered that the *Melissa* had anchored at some indefinite point up the river, said to be between thirteen and fourteen miles from the start.

The starters were as follows:—

	Power.	Length on Horse-Water Line.	Pt.	In.	Rating.
Speedway, C. L. Seabury	64.45	39	03		72.84
Mercedes, H. L. Bowden	42.20	31	11		72.30
Challenger, Smith & Mabley	10.44	39	07		88.35
Vingt-et-Un II, W. S.					
Kilmer	59.72	38	10		70.35
Macaroni, C. H. Tangeman	40.38	31	11		68.10
Josephine, A. J. Buschmann	10.08	29	11		53.40
Mercedes VI, W. K. Vanderbilt, Jr.	39.52	39	00		65.70
Shooting Star, H. A. Loez, Jr.	24.07	37	80		65.55
Flip, C. D. Holmes	38.00	34	20		65.01
Marcirene II, J. W. Allison	34.40	34	50		54.25

Following is the result of the day's race:

RESULTS FIRST DAY.				
	Start.	Finish.	Elapsed Time.	Points.
Josephine	3:05	5:25:25	2:20:25	3
Marcirene II	3:07	5:31:27	2:24:27	2
Flip	3:32	5:10:26	1:47:26	4
Shooting Star	3:32:48	5:13:07	1:40:19	5
Mercedes VI	3:33:05	4:54:35	1:21:30	10
Macaroni	3:37:22	5:05:43	1:28:21	9
Mercedes U. S. A.	3:44:12	5:08:54	1:24:42	7
Speedway	3:44:57	5:07:10	1:22:13	8
Vingt-et-Un II	3:54:00	5:00:54	1:15:54	6
Challenger	4:04:17	withdrew		

"VINGT-ET-UN" WINS ON FRIDAY.

There was a stiff southeast wind up the river Friday, with the ebb running strong against it throughout the race. The water was rough at all points, and in the more exposed portions it was unfit for the average auto-boat with low freeboard and open cockpit with flimsy hatches. The *Challenger* was not present and the *Josephine* fouled a mooring just before the start and lost her screw. The others were sent away in the same order of time as on the preceding day. This time the course was stated to be the full thirty-two miles. The up-run was made with no serious difficulty, *Mercedes VI*, holding the lead to the turn, but on the way home she came to grief, being compelled to withdraw after stopping several times to bail out. *Shooting Star* and *Speedway* were also well filled with water, and were compelled to stop and bail. *Vingt-et-Un II* came through in good shape, winning easily and making a speed of 22.05 knots, if the course is correct. The official times were:—

RESULTS SECOND DAY.				
	Start.	Finish.	Elapsed Time.	Points.
Marcirene II	2:07:22	4:50:20	2:51:58	6
Flip	2:32:00	4:47:50	2:15:50	7
Shooting Star	2:32:48	Did not finish.		
Mercedes VI	2:33:03	Did not finish.		
Macaroni	2:37:22	Did not finish.		
Mercedes U. S. A.	2:44:12	4:50:20	2:15:17	5
Speedway	2:44:57	5:14:38	2:29:41	4
Vingt-et-Un II	2:54:00	4:21:03	1:27:03	8

"VINGT-ET-UN" WINS AGAIN.

On Saturday, although the weather was clear and warm, the sea and wind were still worse, combing up the ebb tide in a way that was hardly reassuring to the crews, even off the club float; with the certainty of something much worse in the stormy waters of the Tappan Zee. The start was made at 3 o'clock, in the regular order, the entire ten starting. The *Josephine* went off promptly from a standing start, and *Marcirene II* made a very good start. The *Flip* went off on time, but the

*Shooting Star*, after a smart start, lay down just beyond the line; after some minutes she was started, ran a short distance, then gave up. The *Vanderbilt Mercedes* behaved badly, refusing to start for some minutes. The *Macaroni*, steered by William Wallace, of Boston, made a good start and was soon out of sight. Bowden's *Mercedes U. S. A.* and the *Speedway* were both late over the line. The *Challenger* started and ran up the river until lost to view.

The *Vingt-et-Un II* was the first to return, coming down the river at speed in a smother of white water, running smoothly and easily with her stem cutting the waves, in excellent trim. Her time was 1:30:24, which for a course of thirty-two miles would be 21.24 knots. The *Speedway* came next, moving fast and riding the rough water well, but showing about five feet of bow clear of the water. She brought the alarming news that the *Macaroni* was afire near Dobbs Ferry. This was confirmed by *Mercedes U. S. A.*, Mr. Bowden having run back to give assistance, but other launches and boats were near at hand. The *Macaroni* was badly burned, but her crew were taken off safely. The other auto-boats to finish were the *Flip*, *Marcirene II*, and *Josephine*, the latter not timed. The *Mercedes VI* broke down off 151st street and was towed in; *Challenger* did not return to the clubhouse.

The official times were:—

RESULTS THIRD DAY.				
	Start.	Finish.	Elapsed Time.	Points.
Josephine	2:35:00	Withdrew.		
Marcirene II	2:37:22	5:34:17	2:56:55	6
Flip	3:02:00	5:14:26	2:12:26	7
Shooting Star	3:02:48	Withdrew.		
Mercedes VI	3:03:05	Withdrew.		
Macaroni	3:07:22	Burned.		
Mercedes U. S. A.	3:14:12	5:09:15	1:55:03	8
Speedway	3:14:57	5:00:34	1:45:37	9
Vingt-et-Un II	3:24:00	4:54:24	1:30:24	10
Challenger	3:34:17	Withdrew.		

## Report of Small Car Trials.

Special Correspondence.

LIVERPOOL, Sept. 16.—The judges issued on September 15 a comprehensive report of the Hereford small car trials. The provisional awards mentioned in my report of the trials last week were confirmed and further awards of medals were made.

Gold medals were awarded to the Wolseley Motor Car Co. for excellence of design, construction and workmanship of its cars, Nos. 10 and 20; also to the Siddeley Auto-car Co. for the general merit of its 6-horse-

power car. The Siddeley car is, as a matter of fact, made by the Wolseley company. Another gold medal was awarded to the Swift Motor Co. Awards of three silver and six bronze medals were also made.

The following information, gathered from the judges' report, may be of interest:

Out of thirty-eight entries, thirty-five competitors started, and twenty-six of these completed the 600 miles. One of the most frequent causes of stoppage was defective junctions in pipe work; the use of short rubber connections for water pipes and of brass flanges on exhaust piping caused much trouble.

Great improvement was noted in the design and construction of steering gear, although in most cases sufficient protection from dust and mud was not afforded.

The number of stoppages caused by defects in inlet valves showed the need of attention to the proper design of the coters and fittings at the end of the stem.

The construction of clutches as regards adjustment and end thrust showed considerable improvement, as also did the electric wiring and terminals on the majority of the cars.

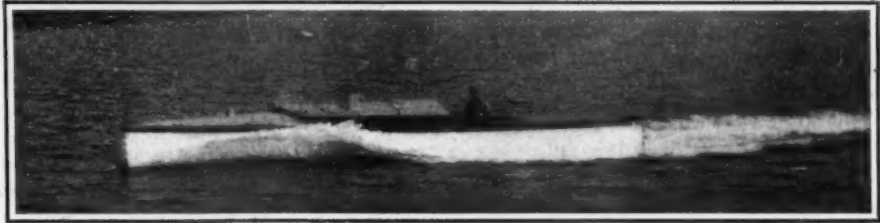
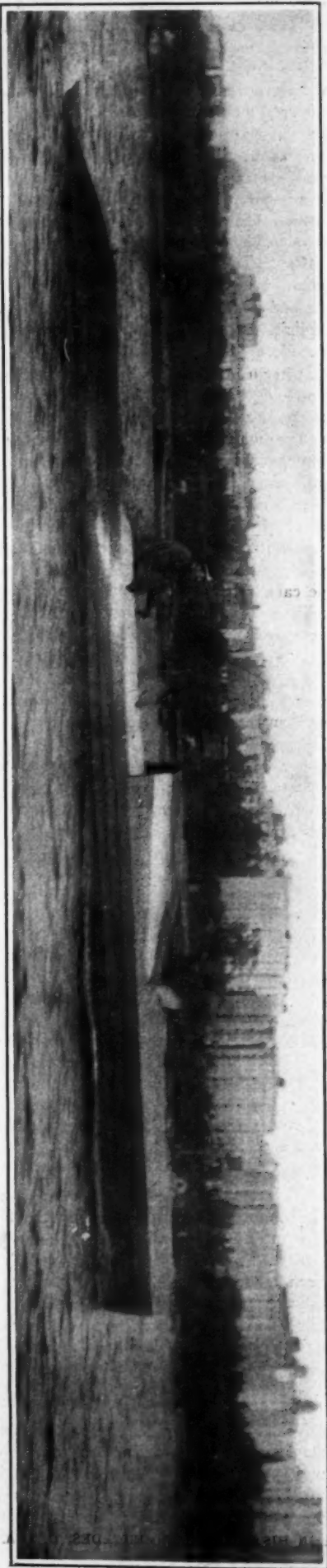
The consumption of petrol (gasoline) throughout the trials was carefully noted, and the amount used varied considerably. The 7-horsepower Clyde averaged more than 47 miles to the gallon—a remarkable performance working out to .033 gallons per ton-mile. The Swift, Siddeley and 6 1-2-horsepower Humber all averaged 38 miles to the gallon. The average consumption of all the cars was 25 to 28 miles to the gallon.



H. L. BOWDEN IN A CHARACTERISTIC ATTITUDE IN HIS AUTO-BOAT MERCEDES, U. S. A.

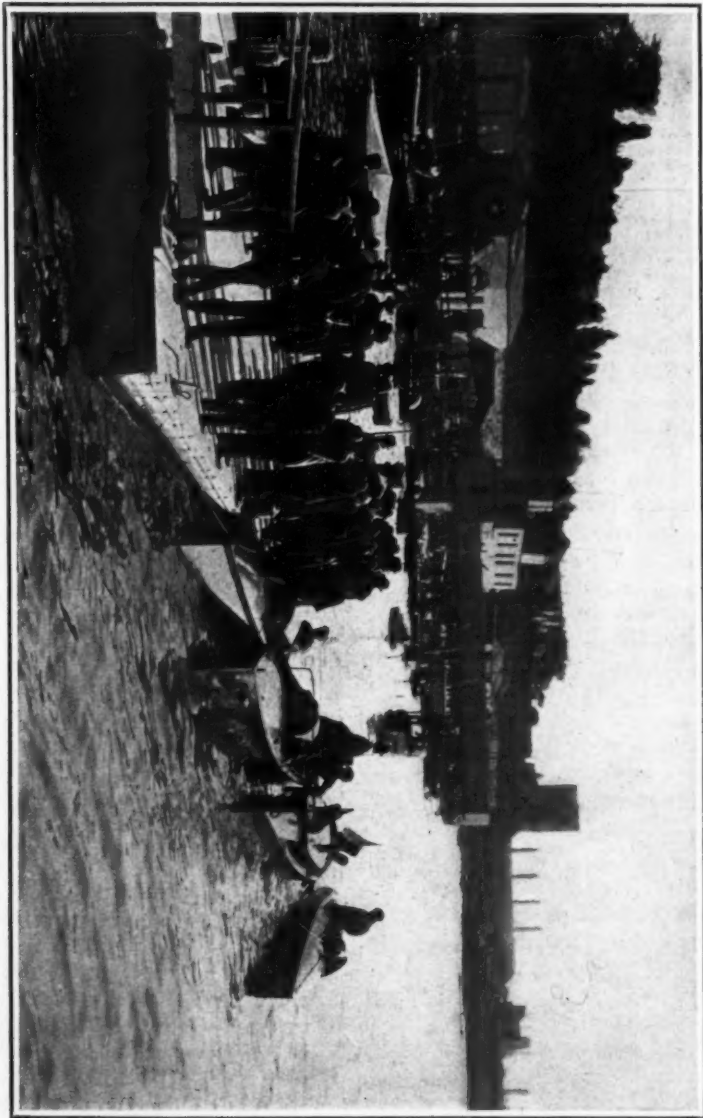


WILLIAM K. VANDERBILT, JR. STANDING ABOARD THE MOTOR IN HIS NEW AUTO-BOAT MERCEDES VI., IN THE RACE FOR THE A. P. B. A. CHALLENGE CUP ON THE HUDSON RIVER.



AUTO-BOAT VINGT-ET-UN, WINNER IN THE A. P. B. A. RACES ON THE HUDSON.

AUTO-BOATS ALONGSIDE THE FLOAT OF THE COLUMBIA YACHT CLUB DURING THE RACES LAST WEEK



H. L. BOWDEN'S AUTO-BOAT. MERCEDES, U. S. A., GOING AT SPEED.

Tables were also given showing the order of merit as regards noise, ease of manipulation, comfort of passengers and vibration.

An interesting calculation was made of the horsepower developed by the various cars on the three test hills. The horsepowers at the driving wheels, as shown by the best performance on the three hills, averaged 4.75 horsepower for the cars rated at 6 horsepower.

The judges concluded by stating that they considered a distance of 600 miles insufficient to bring out the qualities of the minor details of the cars, and recommended that future trials should take place over a longer course.

## Wants Gordon Bennett Changes

The Marquis De Dion is said to have suggested several changes in the conditions for the French Gordon Bennett eliminating trials and, if possible, for the race itself. He would have the distance increased to 1,000 kilometres (621 miles), make the race a two-days event and permit changing drivers when necessary.

The Automobile Club of France has repudiated the statement, which emanated from Berlin, that it applied to the Prussian government for permission to run next year's race on the Homburg course. The French Ardennes, where They won his preliminary victory, is likely to be again selected for both the trials and the race itself. If any German trials are held they will take place over the Schleswig-Holstein route which was chosen for the May trials, but was not used owing to the nomination of the Mercedes cars without competitive trial and the withdrawal of all the other German cars except the Opel-Darracq.

A good story is told by our Irish contemporary, *Motor News*, of the troubles of a French chauffeur in Ireland. It seems that the chauffeur was hired by a Cork automobilist, who gave his new man to understand that if he was once fined for illegal speeding he would be discharged. Much perturbed, the chauffeur hied him to the police barracks, where he explained the situation to the chief of police, and propounded the conundrum, "How fast can I drive?" And the chief, being a soft-hearted Irishman, thought the matter over and replied, "Faith, then, ye may thrive as fast as ye like." Beaming with delight, the Frenchman thanked the chief profusely, and was about to depart, when the latter added, "Sure, now, but ye must be careful not to drive too fast." And now the poor chauffeur doesn't know where he's at.

General Booth, who recently concluded an automobile tour of England from Land's End to Aberdeen, in a farewell address to his "comrades and friends," concludes with "Yours, at motor speed for the Kingdom."

## Physician's Experience With a Runabout.—II\*

By HARRY W. FREEBERG, M.D.

BY this time I had fallen quite in love with my light runabout, both for its convenience in my profession and because of the pleasure that was derived from it. Having become familiar with its operation, I determined to take a short tour through northern Indiana, southern Michigan, across Lake Michigan to Chicago and north to Evanston, Ill., my old college town.

### EXTRA WATER TANK FITTED.

Before starting, I had a tinsmith make a long, cylindrical water tank seven inches in diameter and having a capacity of six and a fraction gallons. This tank was placed just back of the seat and above the regular tank, to the top of which it was connected by a rubber hose. It acted simply as an extra supply tank, as it did not absorb any of the heat from the tank below because the water did not circulate through it. With this valuable aid to the cooling apparatus, I ran the first 200 miles of the jour-

wrong one, but when the mistake was discovered we drove on to where a road turned to the right and crossed over to the road we should have taken. The cross road was six miles long and it was an "awful" road—dirt and sand and full of stumps and hills. A farmer whom we stopped to ask about the road looked bewildered and a little frightened, the reason for which we could not understand until he told us that he had never seen one of "these yer things" before. The directions he gave only put us more in the dark.

After many trials and tribulations, we reached the right fork and were not long thereafter in arriving at Rochester, Ind., where we ate dinner, rested for half an hour, oiled up the engine and poured two gallons of gasoline into the tank. Leaving Rochester at 2.45 p. m., we took a northeasterly direction, passing through Mentone and Palestine, Ind.; but between these two places we again lost the road and had to go back. The road from Rochester to Mentone was sandy and very difficult to traverse with an automobile.

We arrived at Warsaw about 5 o'clock. The day being Sunday, the gates of Winona were not opened until 6 p. m., so we cleaned up and had supper and then went out to the lake, which is only two miles from town. After engaging a room at the hotel, we proceeded to look up friends, with whom we spent the next three days playing golf, tennis and boating.

### PUNCTURE REPAIRED WITH RUBBER BANDS.

A tire was found nearly flat when the runabout was inspected on the day before we resumed our journey. This seemed a rather serious matter, as I had taken along no extra tire nor even a repair outfit, having merely filled each tire with a half-pound of anti-leak compound. So I had arrived at a time when I had to rely upon my own resources, and accordingly decided to try the expedient of inserting some small rubber bands in the puncture and giving the anti-leak a better chance to do its work. A darning needle and some rubber bands were purchased at a small notion store. The head of the needle was then cut off at about the center of the eye, and with the forked portion of the needle several bands were pushed through the puncture, which had been made by a long tack. The tire was then wrapped with some tape which an electric line man gave us, and with these repairs I had a tire that ran the rest of the tour without giving the least trouble.

### HELD UP BY A CLOUDBURST.

We left Warsaw the following morning at 5.25 o'clock and ran north to Goshen and westward through Elkhart, South Bend and to Buchanan, Mich., a distance of eighty-one miles, over which we made a fast run of four hours and fifteen minutes. From



MAP OF DR. FREEBERG'S ROUTE.

ney with the initial filling of water. As steam and air accumulated in the lower tank, it was necessary to run a quarter-inch exhaust pipe from the top of the lower tank to the top of the upper one.

It was not hard to find company for this trip. A young acquaintance was enthusiastically eager to go. Preparations to start were made on the second day of August. The start was delayed two hours, however, by an early morning shower; but at 7 a. m. we were off, with fair roads and a bright day in prospect. We had written to some friends at Logansport that we would arrive there at 10.30 a. m., and, remembering this, we tried to make up time, and arrived at Logansport, fifty-five miles, at 10.25 o'clock.

### TOOK THE WRONG ROAD TWICE.

After stopping for three-quarters of an hour, we resumed the journey northward. There were two roads leading out at different angles and of course we took the

\*Continued from page 385, issue of September 10.



Warsaw to Goshen, a distance of twenty-seven miles, which we covered in one hour and thirty-five minutes, the roads were fine. A terrific storm of wind, hail and rain obliged us to pull into a barn before reaching Elkhart, and upon resuming the trip about half an hour later we found the road full of water; but this was not all: trees were blown across the road, and in one place a barn had been overturned and was lying on its roof almost in the middle of the highway. Entering Elkhart, we were obliged to run in the car track, as the mud was next to impassable. But after passing through the city we were nearly out of the path of the tornado and the roads began to be good again, and upon reaching South Bend we had very fine traveling.

We stopped at that beautiful little city long enough to clean our commutator brush and chain and to have a little talk with some of the automobile dealers. One with whom we fell into conversation had come from New York in a steam carriage and he claimed to be well satisfied to make from eight to twelve miles an hour.

After refilling the tank with gasoline and taking explicit instructions from half a dozen willing tutors, we started for St. Joseph, Mich., on the east shore of Lake Michigan. At Buchanan, where we arrived at 1 p. m., the cyclometer registered 209 miles, while at Warsaw it had stood at 128, making a distance of 81 miles covered in four hours fifteen minutes of actual running time. At Buchanan, where we had dinner, we refilled the water tanks for the first time since leaving home, making approximately 200 miles on one filling.

#### HARD TRAVELING OVER SAND HILLS.

The proposition now ahead of us, from Buchanan to St. Joseph, was a hard one, the roads being fearfully hilly and deep with loose sand nearly all of the way. It was 2 o'clock when we started on the twenty-seven-mile run over a road concerning which no one could give us much encouragement. Three hours were consumed in traversing the distance, but we were glad to get to St. Jo at all. On two occasions my friend had to get out and walk up a sand hill, but never did he push. Another time we lost our way but did not go far on the wrong road that time. At the top of every hill I threw in the high speed but had to release it at the bottom for a mud hole, and then run on the low speed all the way up the next sand hill. The motor came to an abrupt stop at the bottom of one of the hills and several attempts to start it were unsuccessful. Raising the cover over the back of the body, we found the wire disconnected from the spark plug, which was not a serious difficulty to remedy.

Just as we were pulling into Benton Harbor we ascended a tremendous hill with only one track to follow, and that of sand. The motor must have made less than 100 explosions per minute and I felt that I would have to give it up and be pulled the rest of the way up by natural horse power,

but to my delight the engine did not fail. Few motorists were seen in Benton Harbor, and there was no difficulty in understanding the reason why. From this place we ran directly to St. Joseph, two miles, where we put up for the night and took in the carnival which was being held there at the time.

Friday morning at 7 o'clock we left by boat for Chicago. Our tickets were 75 cents each, while the charge for the automobile was \$5. The rates of \$8 for touring cars and \$5 for runabouts impressed us as being disproportionately high.

(To be continued.)

## Lake Lucerne Auto-Boat Race.

Special Correspondence.

PARIS, Sept. 14.—Auto-boat racing was never held in such a magnificent setting as the first annual regatta at Lucerne, Switzerland, on the Lake of the Four Cantons, last Saturday and Monday. The scenery was magnificent beyond comparison, and as the

(Daimler), 6:26:55; *Wilhelmine* (Daimler), 6:40:23.

The racing auto-boats competed on Monday over a course measuring 71.82 miles. In the class from eight to twelve meters *Hotchkiss* won from *Trèfle-à-Quatre* and *Mercedes IV.* in 2:43:40 2-5. The time of the Richard-Brasier boat was 57 1-5 seconds more, and of the famous *Mercedes IV.* 11 minutes 9 seconds longer. In the class for boats less than eight meters long *Rapee III.* won from *Berleit IV.* in 2:54:07. *Berleit* was more than an hour slower.

There was also on Monday, September 12, a supplementary race for cruisers of not more than 10-horsepower that had been in use on Lake Lucerne before July 1, 1904. This was won by *Habsbourg* in 4:32:36.

An alcohol motor pump, of German manufacture, is used at Matanzas, Cuba, to supply the city with water. The price of alcohol in Cuba, about ten cents a gallon, makes it a cheap fuel, and the cost of



A SNAP SHOT TAKEN ON LAKE LUCERNE DURING THE AUTO-BOAT RACES.

slender craft raced over the placid bosom of the blue waters, leaving gracefully spreading angles of white behind, they formed a charming picture.

Although heavy rain fell during the start of the race on the first day, obscuring the fine scenery and making it uncomfortable for the spectators, the rain did not last long and the finish was watched without discomfort. Only cruising launches competed on this day. Four boats started in the class for boats up to eight meters in length and rated at not more than 30-horsepower. The course was a zigzag one, the start and finish being at Lucerne and the boats required to skirt the shores of the lake all the way around, covering a distance of 57.65 miles. The results were: *Pertuisane* (Panhard motor), 3:25:28; *Titan IV.* (Delahaye), 3:55:21 2-5; *Excelsior V.* (Aster), 4:23:36; *Nina* (Volpi), 4:30:57.

Three cruisers, from eight to twelve meters long and of not more than 50-horsepower, covered the course as follows: *Marie Madelaine* (Panhard), 3:11:28; *Habsbourg*

operating the pump, which is of 75-horsepower, is about \$4 a day of ten hours, during which time the quantity of water pumped amounts to 1,000,000 gallons. The total cost of the machine, including installation, was \$6,000. German concerns are selling a considerable number of alcohol motors in Cuba for pumping and electric lighting plants. One firm, according to a report made by United States Minister Squiers, has contracted to install an alcohol motor pump at Vento, for use in connection with the Havana water supply system, to develop 180-horsepower and pump 1,000,000 gallons an hour at a fuel cost of \$1.60 an hour, the total cost of machinery and installation to be \$25,000.

**Godfrey**—I am sorry to hear that Squalop is in a bad way financially. What is the cause of it?

**Scorjel**—As nearly as I can learn, he has been trying to maintain an automobile position in society on a bicycle income.—*Chicago Tribune.*

## HOW TO REACH THE VANDERBILT CUP COURSE.

**H**OW to get to the Vanderbilt Cup race course is a question that is of live interest to the thousands of persons who, weather permitting, will undoubtedly attend the great road race on Long Island. Present indications are that the attendance will be very large, and will include not only residents of New York and Brooklyn, but many from neighboring states and from more distant parts of the country. In our last issue a complete account of the hotel accommodations along the route, as ascertained by members of *THE AUTOMOBILE* staff, was published, and this is now supplemented by directions as to the best ways of reaching the course by automobile and by rail.

For those who will spend the night on the course the question of route and means of transportation is simplified. A choice of conveyance by automobile, train, or trolley can be made, and the route selected followed at leisure.

Aside from the residents of Long Island who live at a convenient distance from the race route, however, those who expect to go from New York in time to see the start of the race on October 8 will have to be astir at a very early hour on Saturday morning, no matter what means of conveyance may be used.

It should be borne in mind that a great "tactical" advantage will be gained by being inside the triangle formed by the course. Only at the controls at Hicksville and Hempstead will it be possible to cross the course in a car and get inside the triangle after 5 o'clock on the morning of the race. Those who go by rail will of course be able to get inside the triangle at intervals throughout the entire day.

For the sake of clearness, the routes to the course and the means of conveyance will be considered separately.

### Routes by Automobile.

Automobilists who start for the race early enough on Saturday morning can travel over the course until some point that strikes their fancy is reached, and a location secured. There are miles of unfenced prairie and grazing lands along the route where the cars can be parked alongside the road, and the race watched from the owner's vehicle. This will be a great convenience for those who do not expect to rely upon roadhouses or hotels for food sup-

plies. In our last issue the various points of advantage were described. Bridges and ferries on the East river give the automobilist access to Long Island from Manhattan. There are only two ferries that are really practicable, the approaches to the others being through the poorly paved and often narrow streets which line both shores of the East river. The more popular of these is the Thirty-fourth Street Ferry of the Long Island Railroad, from the foot of East Thirty-fourth Street, New York, to Hunter's Point. This is the route usually travelled by automobiles to and from Long Island, the approaches being good on both sides: About three miles further north, at East Ninety-second Street, is the Astoria Ferry, easily reached from the upper part of the city, and convenient to the roads on the north shore of the island.

The two bridges are the old "Brooklyn

ing demands of the traffic. Thus far the ferry company has taken no action in relation to the race, but at very short notice extra boats can be put into service.

Driving from the boat on the Long Island side, a turn is made past the station of the Long Island Railroad into Borden Avenue, leading straight away from the river.

Half a mile from the ferry Borden Avenue passes under a railway viaduct; when clear of the viaduct, turn sharply to the left for a short distance and then to the right into Jackson Avenue.

Jackson Avenue is followed for half a mile, leaving a small triangular park and then a large brick school house, both on the left hand, until the Queens County Court House is met on the right hand, with St. John's Hospital on the left.

At the Court House take the right fork into Thompson Avenue, the center of the roadway being of macadam with dirt dressing, with asphalt bicycle paths to right and left.

About one-eighth mile from the Court House there is a dangerous railway crossing, with six tracks, the view being obstructed by freight cars on some of the tracks.

The road, which is good, now leads by the New Calvary Cemetery, on the right, distance two miles, then through the village of Woodside, over a railway crossing with four tracks, and then through the village of

Winfield, where the Shell Road, or the Newtown and Bushwick Turnpike, leading to Flushing, crosses. Thompson Avenue is here lined on each side with a row of weeping willow trees, so that there is little danger, even in the dark, of leaving it for the Shell Road. The names of both roads are on sign boards on a frame house on the far corner, left hand side.

Beyond the willow trees are two lines of railway tracks, then Maurice Avenue crosses at an acute angle, leading away to the left, Thompson Avenue in a straight line being the right-hand fork.

Just beyond this crossing is Broadway, crossing at right angles in the center of the village of Newtown, a large frame store with an iron drinking fountain in front marking the left-hand far corner.

Continuing straight on, leaving the store on the left, a church is passed on the left hand and almost opposite another on the



View when Approaching Wulforst's Hotel, which Marks the Turn to the Left from the Hoffman Boulevard into Hillside Avenue on the Route from Thirty-fourth Street Ferry in New York to Hempstead or Queens.

Bridge," entered at Park Row, New York, and leading to the heart of the business section of Brooklyn, and the new "Williamsburg Bridge," recently opened, with an approach at Delancey Street, near the foot of East Grand Street, New York, and leading into Broadway, Williamsburg; and then into Bushwick Avenue and the Jamaica Road, both of good macadam or brick.

The great majority of vehicles attending the race will cross the Thirty-fourth Street Ferry, and, for their benefit the route is given in detail. See maps on pages 380 and 381.

From Broadway, New York, or any of the north-and-south avenues the ferry may be reached by a run of half a mile or so east through Thirty-third or Thirty-fourth streets. There is a heavy traffic of all sorts of vehicles across the ferry, but the trip is a short one, about six minutes, and every effort is made to meet the vary-





A Well-Known Landmark in Jamaica—Peace Statue on Hillside Avenue which marks the Intersection of the Cross Road, that, Taken to the Right, Leads into Merrick Road on the Route to Hempstead.

right hand; beyond this second church is a small automobile supply and repair shop, the sign showing plainly. The distance from the ferry is four miles.

Just beyond the two churches the road divides in a Y, the left fork being followed in almost a straight line. The road is now known as Hoffman Boulevard, and it is plainly marked by a row of telegraph poles to both left and right. A pile of broken stone, beams and building material is passed on the left hand. The roadway is somewhat narrower, but in good condition, though repairs are going on in places about here. After passing the ruins of a burned house on the left the road passes by the Maple Grove Cemetery, plainly marked by the trees and shrubbery.

When clear of the cemetery, the road winds to the right and shortly crosses at right angles Hillside Avenue, Wulforst's Hotel, a large frame building, being visible on the left-hand side far corner, as Hillside Avenue is neared. A view of the hotel as it appears on approaching the turn is shown in the reproduction of the photograph on the opposite page.

Turn left at right angle into Hillside Avenue, leaving the hotel on the right hand, and passing between rows of weeping willow trees. The seven-mile point, from the ferry, is about 1-4 mile beyond the turn into Hillside Avenue.

The road is wide and good here, with rising ground on the left hand, and lined on each side by snug cottages.

Just before reaching the normal school, a large brick building on the hill on the left hand, there is a dangerous trolley crossing,

there being no street, but only a private right of way which is easily passed unnoticed.

After crossing the trolley tracks, Flushing Avenue is crossed, with the normal school to the left, and another large brick building, the public school, a little further on to the right. Still further on the roadway divides on each side of an oval mound surmounted by a monument with a handsome bronze figure of Peace with arms extended. See photograph on this page which shows the front of the statue, which is at right angles to the direction of travel here described.

A gasometer is visible up on the hillside to the left, and a short distance beyond it is the tower of the Hollis waterworks, also on the left and up the hillside, while lower down on the same line is a small square building, apparently a pump house.

Continuing along Hillside Avenue, at a little more than half a mile from the waterworks, a road crosses at right angles, extending up the hill in a curve on the left, while on the right it runs down between turnip fields.

This is Queens Road, leading from Flushing to Queens; it is marked by sign boards on the far right-hand side (see photograph on this page) and by a small yellow sign of land for sale on the far left-hand corner. The distance from the ferry is about 9 3-4 miles.

Turn to the right into the Queens Road (also known locally as Vogel Street) and continue for about half a mile, when a right-angle turn to the left leads into the Jericho Turnpike, less than one mile from the crossing of Creed Avenue, a local name for the Springfield road which is the western boundary of the cup course.

#### ROUTE TO HEMPSTEAD.

Hempstead will be the objective point for most of the automobilists who intend to reach the course after the roads outside of the controls are closed to traffic. At this point entrance to the triangle can be had at any time during the day, as the racing cars will pass through the town at a speed not greater than eight miles an hour.

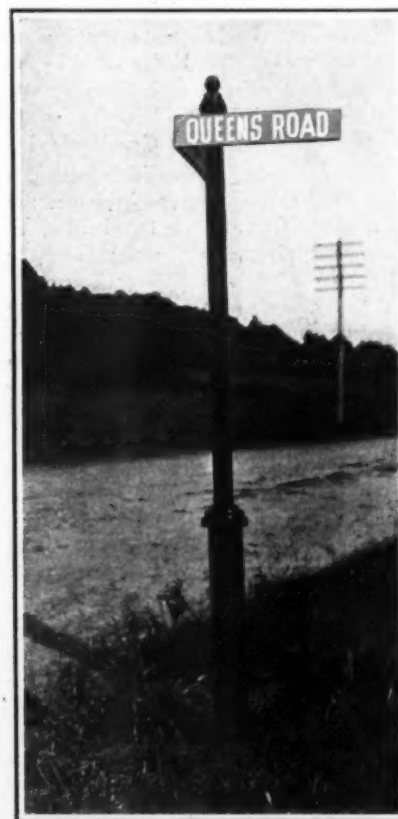
To reach Hempstead, follow the route from the East Thirty-fourth Street Ferry in New York exactly as laid down in the foregoing instructions as far as the monument on Hillside Avenue in Jamaica—see photograph on this page. Here, instead of continuing on straight to Queens, turn sharply to the right into the cross road that leads directly to the beginning of the Merrick Road in the town of Jamaica. Follow the Merrick Road in a southeasterly direction until the town of Rockville Centre is reached. Here a turn to the left is made into the main road (Village Avenue), leading north to Hempstead.

In case of congestion of traffic there are other good roads further along on the Merrick Road, near Baldwin and at Freeport, leading north directly into Hempstead.

Those who drive to the course from New York by way of the Williamsburg or Brooklyn bridges, the routes for which are described later in this article, and who do not expect to reach it before it is closed to traffic, will take care to turn off Hillside avenue in Jamaica and follow the Merrick Road the same as described in the foregoing "Route to Hempstead."

#### ROUTE THROUGH FLUSHING.

The route from New York City by the Ninety-second Street ferry, previously referred to, is indicated on the map on page 380. The landing is at Astoria on the Long Island side. From here a practically straight road nearly five miles long leads to the town of Flushing. On leaving the ferry follow Flushing Avenue through Long Island City until Flushing Bay is reached on the left-hand side; here the avenue branches into Jackson Causeway, which is followed across the bridge over Flushing creek and straight on to Main Street, Flushing, where the route turns sharply to the right. Main Street is followed for five blocks, when at the intersection of Madison Street take the left fork into Jamaica Avenue, and continue on straight until the old railroad route is reached on the outskirts of the town; here a turn to the right at an obtuse angle is made into Jamaica Road, which is followed in its windings until Hillside Avenue (at right angles) is reached. This turn is distant a little more than three miles from



Sign Post on Hillside Avenue, beyond Holliswood, which Marks the Turn to the Right into Queens Road (also known as Vogel Street), leading direct into the Village of Queens. On the Main route from New York to the Cup Course.

Flushing. The normal school on the left, as one descends the hill, with the public school also to the left but on the opposite side of Hillside Avenue, mark the turning point. The route on to Queens follows exactly that taken by the automobilists from the Thirty-fourth Street ferry in New York.

#### BROOKLYN BRIDGE ROUTE.

Many of those who come over from New Jersey by the ferries across the North river will likely go out to the race by way of the old Brooklyn bridge. On reaching the Brooklyn end of the bridge follow along Fulton Street to Clinton Street, turn to the right and continue along Clinton to Schermerhorn, then turn left on Schermerhorn to Nevins Street, which is paved with red brick. Turn to the right into Nevins Street and continue straight on to the intersection of Dean Street. Turn left into Dean Street and continue on for three blocks to Flatbush Avenue. Turn right into Flatbush Avenue and continue straight on to the Plaza at the entrance to Prospect Park. Bear to left across the Plaza, striking the Eastern Parkway. Institute Park, containing the reservoir and Museum of Arts and Sciences, is passed on the right immediately after leaving the Plaza. At Ralph Avenue, the Eastern Parkway swings to the left; continue along this broad parkway until it forms a junction with Bushwick Avenue, into which turn to the right.

The route now followed is the same as the Williamsburg bridge route from Evergreen Cemetery to Queens, described in the following.

#### WILLIAMSBURG BRIDGE ROUTE.

Of the two bridge routes from Manhattan that by the Williamsburg bridge is the more direct. On leaving the bridge, in Williamsburg, Broadway, on which the elevated railroad is located, leads in the desired direction and for any one not familiar with the neighborhood is the best street to follow. The surface of the street is not in as good condition as that of neighboring streets which can be taken, but the route is direct and easily followed even in the dark. About three-quarters of a mile from the bridge Flushing Avenue crosses Broadway, and here turn left into the avenue for a distance of one block, and then to the right into Beaver Street, which is simply a continuation of Bushwick Avenue.

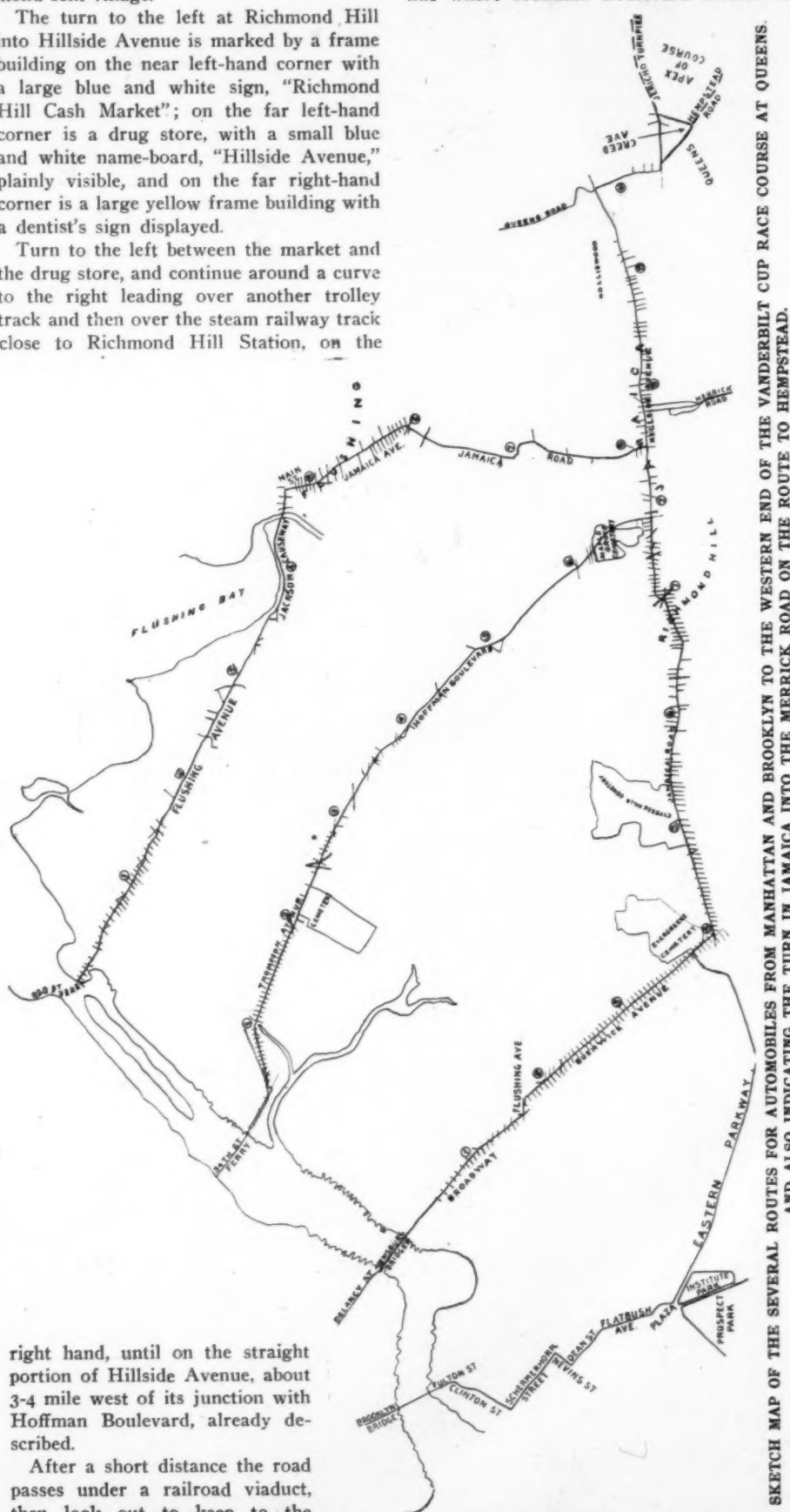
Follow Bushwick Avenue, a broad straight street, for about 2 1-4 miles, until just beyond the Evergreen Cemetery, on the left hand. Coming down a hill as the cemetery is passed, on the near left-hand corner is seen a large yellow frame building surmounted by a tower and flagstaff, Breitkopf's saloon. Facing it, and on the opposite side of the cross street, is the saloon of Frank A. Muntz, a two-story frame building. Turn to the left at Breitkopf's saloon into the Jamaica Road, which has a brick pavement with two lines of trolley tracks.

Follow this road, which is nearly straight, for just three miles, to the center of Richmond Hill village.

The turn to the left at Richmond Hill into Hillside Avenue is marked by a frame building on the near left-hand corner with a large blue and white sign, "Richmond Hill Cash Market"; on the far left-hand corner is a drug store, with a small blue and white name-board, "Hillside Avenue," plainly visible, and on the far right-hand corner is a large yellow frame building with a dentist's sign displayed.

Turn to the left between the market and the drug store, and continue around a curve to the right leading over another trolley track and then over the steam railway track close to Richmond Hill Station, on the

Hotel, already mentioned, will be seen on the far right-hand corner of Hillside Avenue where Hoffman Boulevard crosses it.



SKETCH MAP OF THE SEVERAL ROUTES FOR AUTOMOBILES FROM MANHATTAN AND BROOKLYN TO THE WESTERN END OF THE VANDERBILT CUP RACE COURSE AT QUEENS. AND ALSO INDICATING THE TURN IN JAMAICA INTO THE MERRICK ROAD ON THE ROUTE TO HEMPSTEAD.

right hand, until on the straight portion of Hillside Avenue, about 3-4 mile west of its junction with Hoffman Boulevard, already described.

After a short distance the road passes under a railroad viaduct, then look out to keep to the straight road, avoiding two streets which cross with acute angles branching off to the right; then, a short distance on, Wulforst's

Continue on Hillside Avenue, according to previous directions for the route from Thirty-fourth Street ferry.



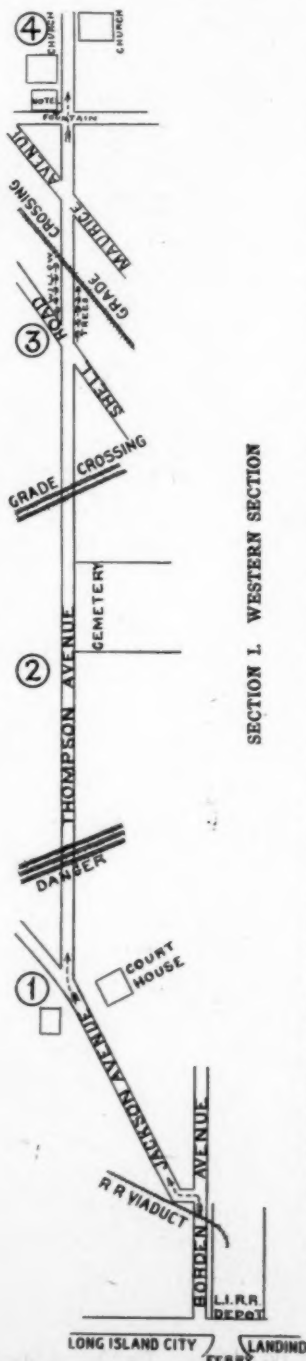
### Railroad Routes to Course.

Those who intend to go to the Vanderbilt Cup race by train or trolley have a choice of routes from New York and Brooklyn all focussing at or in the triangle formed by the course.

The rail routes are from the termini of the Long Island Railroad in Long Island City and Brooklyn. The former is reached direct from the ferry at the foot of East Thirty-fourth street, Manhattan. The Brooklyn terminal is situated at the junction of Flatbush and Atlantic avenues, and can be most conveniently reached from the Manhattan end of the Brooklyn Bridge by taking the elevated train or surface cars crossing the bridge.

The main line of the Long Island Railroad runs in a straight line eastward through

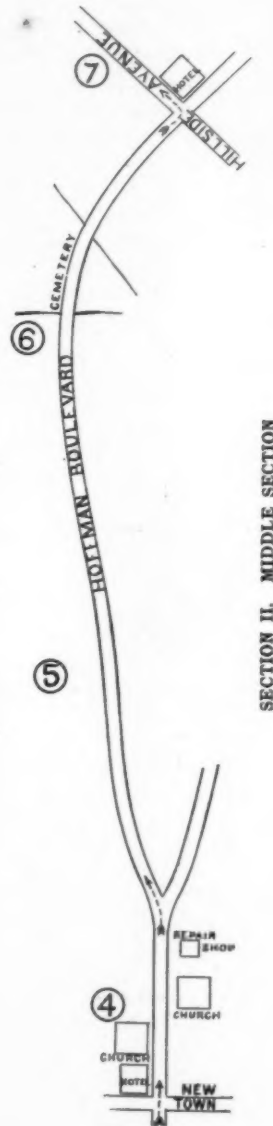
the triangle formed by the course, cutting the course at Creed avenue, in Queens, and at the Massapequa road, in Hicksville. The location of the tracks will be perfectly clear upon inspection of the map published in our issue of September 24. The northern leg of the course as far east as Westbury is within easy walking distance of the railroad at every station. At the present time the summer schedule is in force, and we are informed by the railroad management that it will not be cut down until the traf-



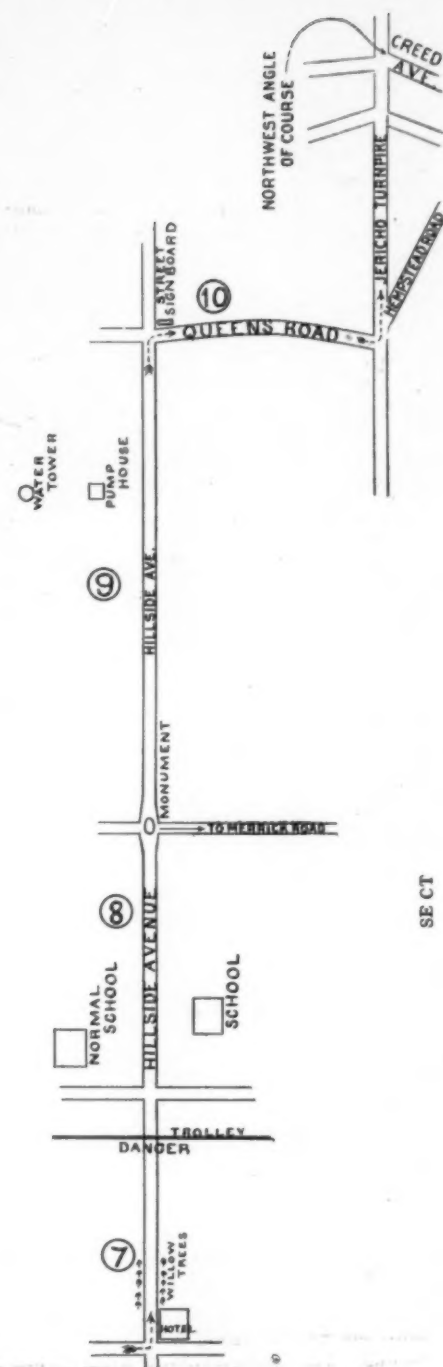
SECTION I. WESTERN SECTION

Diagrammatic Map showing in Plan the Main Automobile Route from Manhattan to the Western end of the Vanderbilt Cup Race Course in Long Island.

(East Thirty-fourth Street Ferry to Queens.)  
NOTE - Direction is not Given by Compass but by Landmarks, the Separate Sections of the Map Overlapping so that it can be the more easily read.  
Figures to the Left within the Circles give the Approximate Mileage.



SECTION II. MIDDLE SECTION



SECTION III. EASTERN SECTION

there are local trains operated between Mincola, Garden City and Hempstead.

### ELEVATED AND SURFACE ROUTES.

For those who do not care to be tied down to the limited schedule of the steam railroad, there is a choice of routes by elevated and surface lines. The Brooklyn Elevated Railroad, starting from the Manhattan end of the Brooklyn bridge can be taken to Ridgewood, the end of the line, where a change is made to surface electric cars for Richmond Hill. At the latter point a change of surface cars is made for Jamaica. Persons resident uptown in New York will find it more convenient to take the ferry at the foot of East Twenty-third street, Manhattan, which lands them at the foot of Broadway, Brooklyn. Here the Brooklyn Ele-

vated Railroad can be taken to the end of the line at East New York, where connection is made with through electric surface cars for Jamaica.

At Washington street, Jamaica, the suburban surface line can be taken for Queens, where connection is made with the shuttle electric cars for Hempstead. From Queens to Hempstead the car track is laid along the Hempstead-Jamaica plank road, over which the cup cars will race. The cars from Jamaica to Queens are operated every 20 minutes, and from Queens to Hempstead every 40 minutes on ordinary days. On the day of the race it is probable that the service will be increased. The running time by this route from Manhattan to Hempstead is about two hours.

Residents of Brooklyn can, of course, take various trolley lines connecting with the surface and elevated roads, as there is a perfect network of trolley lines spread over the western end of Long Island.

Those who live in Jersey and who do not want to cross Manhattan can take the "Annex" ferry of the Pennsylvania Railroad to the foot of Fulton street, Brooklyn, and there get the Brooklyn elevated cars for the route via Ridgewood previously described; or take surface cars stopping at the Flatbush avenue terminus of the Long Island Railroad in Brooklyn.

"Which," asked the knowing one's companion, "which is the tonneau? I've heard that word lots of times, and I'd like to know just what the thing is."

For a moment the Knowing Man looked stumped, but only for a moment.

"Why," said he, "that's easy if you know French. Tonneau is derived from two French words, *ton*, meaning tone or sound, and *eau*, meaning water. It's the apparatus for lessening the noise of the machine by means of tubes of water. Sometimes it's called a muffler."

And the questioner, overcome by his companion's wealth of knowledge, sat silent for the rest of the trip.—*New York Sun*.



Heath  
Panhard Crack.

The method adopted was used in the Paris-Madrid road race and found to answer the purpose well. Each car will carry, attached to the side of the driver's seat, a polished copper box. The checker at the start will drop into this box a card bearing a record of the time of starting; the checker at each control will drop in a record card every time the car passes his control; and the man at the finish will drop in a card bearing a record of the time of finishing. At the conclusion of the contest the boxes, which will be sealed, will be handed over to the race officials, who will use the cards in making up the official figures. This method obviates the possibility of loss of records and makes the work of the checkers comparatively easy and free from liability of error. Instead of checkers carrying around an armful of papers, the records will be carried by the cars themselves. The boxes, which were made in New York City, were patterned after one used in the Paris-Madrid race,

## Putting on the Finishing Touches.

N the early days of the coming week the arrangements for the Vanderbilt Cup race, now only eight days off, will be completed. The work of oiling the course is well under way; the grand stand is practically finished; guards, deputy sheriffs and signalmen, to the number of about 175, have been engaged, and their duties assigned to them. The work of the race commission from now on will consist in putting on the finishing touches.

Among the most interesting of the details recently decided upon is the manner of checking the cars at the various checking points, and keeping the records.

which was in the possession of E. T. Bird-sall, one of the official weighers-in.

The headquarters of the Racing Board of the American Automobile Association will be established on Wednesday, October 5, at the Garden City Hotel, where meetings of the board will be held on Wednesday, Thursday and Friday preceding the day of the race, for the purpose of taking final action on any matters that may still remain open. This evening (Saturday, October 1), the drawing for numbers takes place at the rooms of the Automobile Club of America. Owners and drivers of cars and others interested in the proceedings will be freely admitted. The actual drawing will take place in a private room, of course, but the results will be announced without delay.

The judges and checkers at each of the four turns in the course and in the controls will be provided with special portable telephones, by means of which they can get into instant communication with the officials at the starting-point, who will thus be kept accurately informed of the progress of events with almost no delay, and can, if required, give decisions covering points that may arise miles away. The information sent in will be announced by megaphone for the benefit of the spectators in the grand stand, who will thus be enabled to follow the race intelligently. The New York and New Jersey Telephone Company, which has the telephone work in hand, will run something like 500 miles of wire. Four or more expert telephone inspectors and repair men will be located at the turns and other important points, and will be provided with motor bicycles to enable them to make quick runs to breaks, should any occur.

The great expense incurred in preparing for the race, and particularly in oiling the course, the latter item alone amounting to about \$5,000, has made it practically certain that there will be a deficit to be met when the business end of the race is wound up. A subscription list was therefore started. William K. Vanderbilt, Jr., headed the list with \$200; Mrs. William K. Vanderbilt, Jr., subscribed \$100; Mrs. O. H. P. Belmont, \$50; George Arents, \$50; Long Island Automobile Club, \$50; THE AUTOMOBILE, \$50;

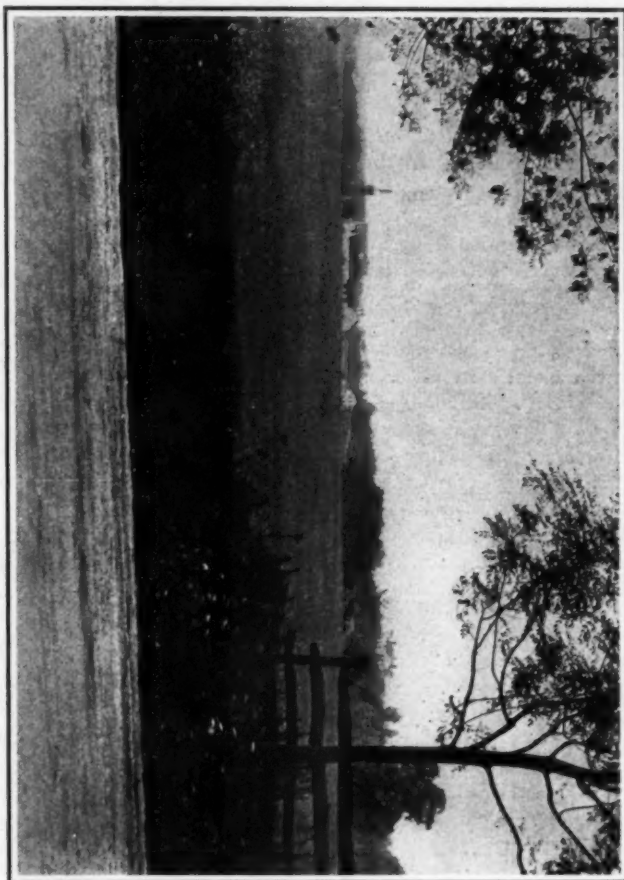
### Present Schedule of Branch Line Morning Trains on Long Island Railroad.

THIRTY-FOURTH ST. FERRY, NEW YORK.	FLATBUSH AVE. STATION, BROOKLYN.	GARDEN CITY.	HEMPSTEAD.
6.20	6.31	7.23	7.28
7.50	7.55	8.52	8.58
9.20	9.27	10.12	10.17
10.50	10.51	11.41	11.46

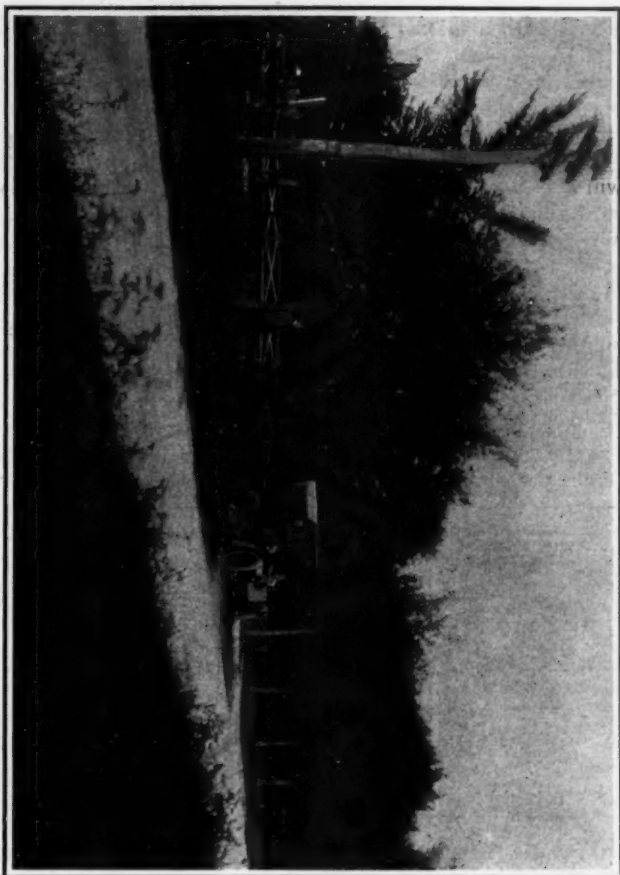
### Present Schedule of Main Line Early Morning and Forenoon Trains to Vanderbilt Cup Course on Long Island Railroad.

THIRTY-FOURTH ST. FERRY, NEW YORK.	FLATBUSH AVE. STATION, BROOKLYN.	QUEENS.	FLORAL PARK.	HYDE PARK.	MINEOLA.	WESTBURY.	HICKSVILLE.
3.35	....	4.22	4.25	4.27	4.33	4.39	4.45
5.40	5.41	6.22	....	....	6.33	6.39	6.48
5.40	5.41	6.25	6.29	6.31	6.37	....	....
6.20	6.31	7.12	7.16	....	....	....	....
7.00	7.03	7.40	7.44	7.46	7.51	....	....
7.50	7.55	8.36	8.40	8.43	8.48	....	....
8.30	8.31	....	....	....	9.16	9.22	9.29
8.50	8.51	....	....	9.34	9.39	....	....
9.00	8.51	....	....	....	9.48	9.54	10.00
9.20	9.27	10.02	10.06	....	....	....	....
10.20	10.23	11.00	....	11.05	11.10	11.16	11.22
10.50	10.51	....	11.32	....	11.39	....	....
11.00	11.02	....	....	....	11.44	11.50	11.56



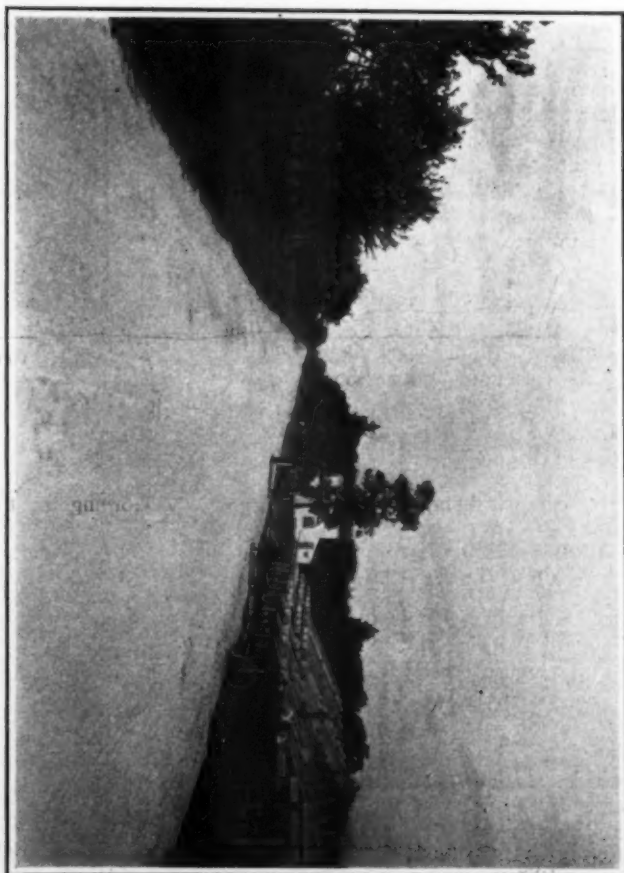


Looking North Across the Meadows from the Vicinity of the Grand Stand.

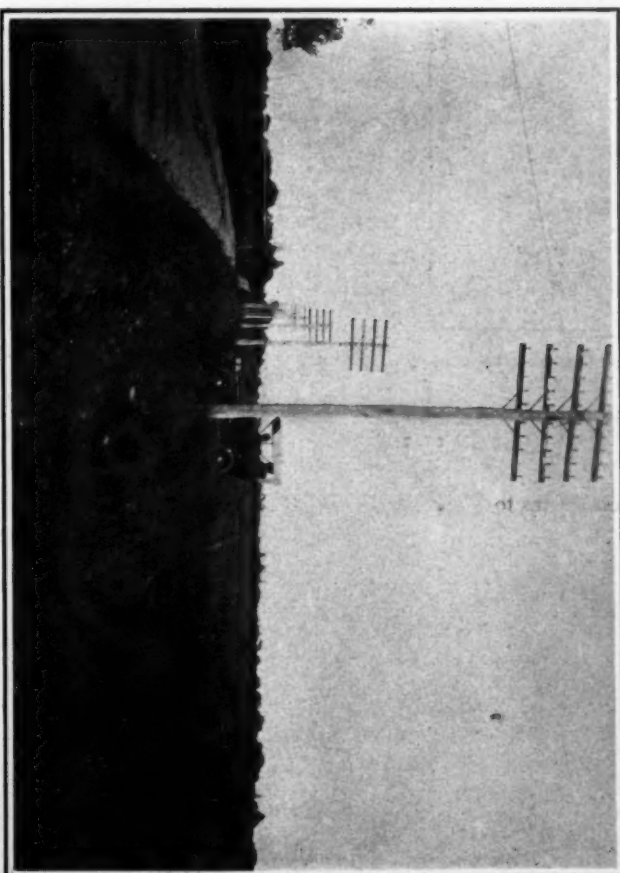


Bethpage Road, Looking Back at the Bad Turn from the Massapequa Road.

BITS OF SCENERY AND IMPORTANT POINTS ON THE VANDERBILT CUP RACE COURSE ON LONG ISLAND COLLECTED BY THE AUTOMOBILE CAMERA FIEND.



On the Jericho Turnpike—Grand Stand to Right, Private Race Track to Left.



Typical Stretch of Prairie on the Course where Spectators' Cars can be Parked.

In addition to the actual subscriptions, letters have been received by Chairman Pardon from a number of automobilists in various parts of the country, who express their willingness to "chip in" if necessary. There is little doubt that the limited resources of revenue will yield their full earning capacity.

Early this week so many of the eighty boxes and of the 360 single seats had been reserved that the race officials felt confident that the demand would considerably exceed the supply before the day of the race. Great care has been exercised to prevent any speculation in seats. Only one box or two single seats will be sold to any individual, unless he is a member of a club affiliated with the A.A.A., and, in addition, is endorsed by a member of the Race Commission. The list of box holders, when complete, will read like a list of prominent American automobilists.

Among those already booked are: Albert C. Bostwick, Commodore F. G. Bourne, W. Gould Brokaw, Howard Gould, O. H. P. Belmont, Mayor George B. McClellan, George B. Pope, Harlan W. Whipple, president of the A.A.A.; W. C. Temple, Pittsburgh, Pa.; Windsor T. White, Cleveland, O.; James L. Breese, George Arents, Jr., Frank H. Croker, George Farrington, treasurer of the A.A.A.; Mortimer L. Schiff, S. B. Bowman, Hollander & Tangeman, H. C. Frick, and the entire Executive Committee of the National Association of Automobile Manufacturers, the members of which will occupy three boxes secured by General Manager S. A. Miles.

Not even the race officials will be permitted to cross the track in front of the grand stand. The road will be perfectly clear at all times from the starting line to a point several hundred feet along the road. All who want to cross will have to do so outside of these boundaries. Further, no one, no matter what his official capacity, will be allowed to approach a car on the line excepting the driver and mechanic. Thus there will be no chance of delay by men getting in each others' way, and the spectators will have an unobstructed view of what is going on at the line. As the start takes place at sunrise, it is doubtful if there will be light enough for instantaneous photographs of the starters.

The brassards worn by the various officials will be colored as follows: Referee (Wm. K. Vanderbilt, Jr.), and the members of the commission, blue; judges, red; timers and starter, green; press, white, with name of publication in black letters. The brassards will be sent out by the Chairman of the racing board.

The pilots who will be on duty at the controls to guide the cars through at the proper speed, will be mounted on motor bicycles, which may be equipped with speedometers. One of the rules of the contest is that a car must pass out of a control exactly as it entered—that is, no work must be done on it until it has passed the neutral stretch.

Even supplies must be taken on outside of the controls. If a car breaks down within the limits of a control, it must be moved out by the crew by pushing on in any way they can, and work commenced after passing the control limit. Tire troubles will also have to be doctored outside, and just beyond each control will be located a lively camp of tire men, with piles of shoes, inner tubes and everything that could possibly be required in this line.

The Continental Caoutchouc Company is importing the entire outfit used in the Gordon Bennett and other great foreign races. This includes, besides the usual repair tools and materials, tanks filled with compressed air, so that filling a tire means simply coupling on a hose from the tank to the

are used in the same general manner as the steel reservoirs, but are so arranged that they automatically cut off when the correct pressure has been reached in the tire. This air bag is said to be the invention of an American, and is much used at races abroad. All the tire camps will be in charge of the most expert tire men obtainable, and no pains are being spared to make the arrangements complete.

William Wallace's 90-horsepower Gordon Bennett Fiat racer, which was damaged during a run over Boston roads last week, was brought to the Hollander & Tangeman garage in New York, where it was put in perfect order. The damage was found even less extensive than was anticipated, and the car is now as good as ever. Wallace, as well as other drivers, has been closely studying the course.

The French steamer *La Bretagne*, which arrived in New York on Sunday last, carried a notable collection of automobiles, consisting of the three Panhards entered in the race, and, in addition, a fourth, to be substituted in case of damage to either of the others, and two Clement-Bayard cars, one the cup racer and the other an ordinary touring car, to be used for ordinary travelling.

A house near the course has been secured for Albert Clement, Jr., and a barn for his automobiles, and he will establish himself there until the day of the race, spending practically all his time in going over the triangle. Up to the middle of the week he had not been over the course, owing to delay in getting his cars through the United States Customs, and was therefore unable to express an opinion as to its suitability for racing. He expressed his approval of the arrangements made for the race, as far as he was acquainted with them. "Just like the French way," he said, through his cousin, who acted as interpreter, the young driver's knowledge of spoken English being very slight.

M. Clement had practically no idea what the course was like, and seemed much interested when shown the map published in the last issue of *THE AUTOMOBILE*. The turns caught his eye instantly and caused him to shake his head. He was quite anxious to know about the width of the road, and when told of the narrow stretches, immediately asked what would happen if a driver slowed down his car and held the middle of the road, illustrating his query by folding his arms and sitting back, as if letting the machine run itself. A typical Frenchman, his gesture made his meaning perfectly apparent without the assistance of the interpreter.

When it was explained that the rules of the road would govern the race, and that a competitor could, if he chose, hold back a faster car than his own by refusing to give way, he stuck his hands deep down into his trousers pockets and grinned a broad, infectious grin, but made no remark. Clement is but a boy in appearance,



Albert Clement, Jr., who Will Drive the Clement-Bayard Car in the Vanderbilt Cup Race.

tire valve and turning a cock. The tanks may be filled if they become exhausted by means of special pumps. Large signs will indicate the locations of the Continental tire camps, which will be three in number—one at each control and one somewhere between—or possibly four. M. Printehorn, one of the leading directors of the Continental Caoutchouc Company, is coming from France expressly to witness the race and see that the tire arrangements are as perfect as possible.

A new scheme, at least in this country, will be used by the United States agency for the Michelin Tire Company at its four track camps. Instead of tanks, heavy rubber bags, each containing sufficient air to inflate one tire, will be employed. These





JOSEPH TRACY AT THE WHEEL OF THE OVAL VANDERBILT CUP CAR.

but is solidly built and robust, with a round, sunburned face. His motorized inaction galled him, and he was full of anxiety to get away and commence preparing himself for the contest.

Teste and Tarte, who, with Heath, make up the Panhard team, are expected to arrive in New York to-day (Saturday), and will at once be hurried off to their track-side quarters. Heath is already in New York, and goes over the course nearly every day. Gabriel, the De Dietrich driver, will probably be a shipmate of Teste and Tarte.

Frank Croker, who will drive the Smith & Mabley 75-horsepower Simplex, is tuning up his car by means of road runs, but has not had it on the course. "I am perfectly satisfied with the machine," said Mr. Croker, "but have not, of course, had an opportunity to see how fast it would go. It was at first somewhat over weight, but this has been remedied and there is now a little to spare.

"The arrangements for the race? Why, it seems to me that they are about as complete as they can be. The only difference I can see between the precautions taken for the Vanderbilt Cup race and those

taken for road races abroad is that the foreigners make use of a great many more men in policing the course.



H. H. LYTTLE IN ONE OF THE POPE-TOLEDO CARS ENTERED IN THE RACE.

"Not being an experienced racing man, I am not in a position to say anything about

the route selected from a racing point of view. My experience in fast work consists of about 5,000 miles in a 60-horsepower Mercedes, which I drive abroad. You know, they let you go as fast as you like in the open country over there; but that is a very different thing from racing in competition with other fast machines. I know that I am the most inexperienced driver in the whole lot, and if I didn't own the car I would not be a competitor in the race; but there is only one way to gain experience in racing, and that is in races.

"I sincerely hope an American machine will win. It does not seem likely; but in any case it is to be hoped the American manufacturers will make a showing that will give them a standing among foreign racing men and manufacturers for the next Gordon Bennett race."

Frank Croker, William Wallace and S.



EDWARD HAWLEY AND MECHANIC IN E. R. THOMAS'S MERCEDES CUP RACER

B. Stevens will be the three amateur drivers in the race; but there is a possibility that the Mercedes of Mr. Stevens may not be in a condition to start. Last week a bad crack developed in the crank-case, and it was necessary to wire to Germany for a new one, as it could not be obtained in this country. It is a question whether there will be time to send it over, fit it to the motor and tune up the car before the day of the race.

Those who wish to reach the grand stand after the race has been started, must, if travelling in vehicles, go from Jamaica to Rockville Centre or Freeport via the Merrick road; thence to Hempstead, through the 6-minute control, and on to Garden City and Mineola, past the Fair Grounds, to Westbury. From Westbury a road runs directly to the starting point, and the entrance to the grand stand opens from this road. The stand is about one mile from the Westbury Railway station. Arrangements are being made to park a number of automobiles in a vacant lot near the stand,

and there are numerous fields along the route where other cars can be left.

Intending spectators will do well to make

a study of the course, by personal inspection, if possible, as this will add much to the interest of the race.

## Gathered on the Cup Course.

*Special Correspondence.*

**G**ARDEN CITY, Long Island, Sept. 27.—Several of the racing machines entered in the Vanderbilt Cup race are now near the scene of the contest. Clarence Gray Dinsmore's 90-horsepower Mercedes, George Arendts' 60-horsepower car of the same make, the 90-horsepower Fiat of William Wallace, Frank A. Croker's Simplex, and the Packard 30-horsepower machine are quartered in the neighborhood of Garden City and Mineola.

In each case, except that of the Dinsmore Mercedes, the cars were accompanied in their arrival by other cars of the same make, which will be used as tenders. These extra cars will not only be of service on the day of the race in carrying gasoline and other supplies for the participating machines, but they will be used in similar ways in all the trial spins which are being taken by the race drivers.

There is much activity on the line of the race course and in the surrounding towns and villages. The work of oiling the roads on the contract of the Racing Board was begun on Tuesday morning. Andrews Bros., of Mineola, have the work in hand, which is to cost \$4,600. The first of the nineteen cars of crude petroleum to be purchased was delivered at Queens to-day. Here the oil was pumped from the tanks into the sprinkling carts, which are equipped with a special device for distributing the oil. Three of these wagons are in use.

About four miles a day is being oiled by the contractors, 115,000 gallons being the total amount to be distributed on the course. In the case of the loose sand roads, there will be more than one application, but on most of the course only one sprinkling will be necessary. The contractors assert that the work is far from an experiment. Many miles of private roads in estates on Long Island have been oiled this summer, and a considerable stretch in Mineola was put under oil for the recent fair. Besides these, three miles in the neighborhood of New Hyde Park were oiled last week through the enterprise of private owners. This road-bed wears well, there being practically no dust discernible as machines pass over it. It is said that the first saturation results in immunity from dust for about two months. The second and succeeding sprinklings lay the dust for fully five months ensuing. The general benefit of the race for the users of these roads will be apparent, therefore, until the snow begins to fall.

Work on the road improvements is coming along rapidly on the Bethpage pike and on the Hicksville road. A considerable

number of laborers are steadily engaged and the road begins to show a condition which augurs well for speed on October 8. The linemen are busy installing the special telephone wires which are to be used on the day of the race. Even the trolley lines are noting the necessity of taking care of the crowds expected and are busy improving their road-beds and replacing poor rails. All these improvements, with the work on the grand stand and the erection of several new sheds where racers are to be housed, have given employment to hundreds of mechanics.



**TWO OF THE RACE OFFICIALS.**

C. H. Gillette, Starter, on the Left; and A. R. Pardington, Chairman 1904 Race Commission, on the Right.

This fact alone has tended to overcome any local prejudice against holding the race on this course. The native population is beginning to feel the prosperity which comes with an international race of this character. Many are erecting booths along the roads for the sale of luncheons and coffee. The tendency is toward enthusiasm, and with the coming of more people to the region will come added opportunities for gain.

Many machines are making a tour of the course each day. At a road-house on the Jericho road where a count is being kept by the proprietor, it was reported that ninety-two had gone by on Sunday and fifty-five on Monday. This will give a pretty good idea of the interest shown by New York enthusiasts, for the count did not include those owned locally.

Clarence Gray Dinsmore's Mercedes was placed on the scales at Garden City, which are to be used in the official weighing of the racing machines on Friday, October 7,

and the weight indicated was 2,300 pounds. As the car weighed 2,202.4 pounds just previous to its shipment from Europe, with the same equipment as when weighed at Garden City, Mr. Dinsmore was surprised, and took the machine to Hempstead, where the weight was tested on another scale. This time the figures obtained gave the weight of the car as 2,237 pounds. Knowing that a little mud and a fresh coat of paint could not explain the difference between the European figures and those shown on the Garden City scales, Mr. Dinsmore wrote to Chairman Pardington asking that the scales be calibrated.

The Race Commission has not as yet had anything to do with the scales, further than selecting them for the official weighing-in. Previous to the weighing-in they will be accurately calibrated by Messrs. Birdsall and Riker, so that the weights indicated will be correct.

### NEWS NOTES OF THE CLUBS.

**BALTIMORE.**—The Automobile Club of Maryland is planning a run to the Delaware Water Gap some time in October. A large number of the members have signified their desire to make the trip.

**BUFFALO.**—T. J. Wagner has resigned the secretaryship of the A. C. of Buffalo, which he has held since the club was organized, and has transferred his business headquarters to New York City. A meeting of the board of governors of the club is to be held this week to appoint his successor to hold office until the election next January.

**DAVENPORT, IA.**—At a recent meeting of the Davenport A. C. the following new members were admitted: A. M. Price, J. L. Hebert, W. A. Fuller, John Eagal, James Bayliss, John Dow, Harry Ryan, Bert Dow, Charles F. Mason, Emil Buck, J. W. Buck, Henry Lage, Horace Roberts, Henry Stoltenberg and J. B. Hostettler.

**TROY, N. Y.**—The Troy A. C., which was organized nearly three years ago, now numbers among its members some of the leading citizens of the city and its vicinity, and has well appointed club rooms in the Hall Building. Aside from its social features, the club is interesting itself in the promotion of laws for the benefit of automobiling, as well as the enforcement of existing laws regulating the use of motor vehicles. Alonzo McConihe is its president and Dr. Archibald Buchanan, secretary.

**HOUSTON, Tex.**—The Houston A. C., recently organized with temporary officers, has held its second meeting, which was largely attended, and at which the organization was made permanent and the following officers elected for the ensuing year: G. J. Palmer, president; Spencer Hutchins, vice-president; Miss Jennie Bering, secretary, and M. J. Lossing, treasurer. The following board of directors was also chosen: Theo. Bering, Jr., W. A. Burkett, Harry Dooley, W. R. Eckert, Charles Meyer, D. Peacock and William Brumby.



## Rebuilding an Early Winton.

By A. WILSON DODS, M. D.

THE following is an account of how I rebuilt Winton No. 61. I bought this car, which was of date of 1899 or 1900, for \$100, and ran it last year some 1,500 miles. It had a leather dash, tiller steer, reach running gear, full elliptic front and rear springs, and the familiar Winton individual clutch transmission, single cylinder motor, and pneumatic control. The transmission gears were not encased, and the spark time was fixed.

Though old, the car was in very fair condition mechanically. Most of the bearings required nothing but cleaning; but new piston rings and new bronze transmission gears were necessary. It was seen that, so far as the life of the machine was concerned, it would well repay rebuilding to incorporate such items as longer wheel base, wheel steer, variable spark lead, and box front, whereby the ease of riding and the appearance would greatly benefit.

Accordingly, to begin with, a new frame was built. The old frame was of 1 1-2 by 3-inch ash, with the side members reinforced by steel strips beneath. The new frame had side members 1 3-8 in. wide, and tapered for the front 20 inches from 3 inches in depth to 2 in. Each side member was armored on the outside with 1-8 in. steel. For the old elliptic springs, 30 in. by 1 1-2 inch., with five leaves in rear and four in front, were substituted a pair of semi-elliptic springs in front, 40 in. by 1 1-2 in., and in the rear a pair of scroll elliptics 36 in. by 1 1-2 in. All the new springs had five leaves, graded. The old reaches were taken out, and the two outside ones shortened and connected as dis-

the ball-adjusting cone and take the lock nut on top of all. One arm of this bell crank extends inward in line with the axle, when the wheels are straight, just clearing the spring and spring clips, and has a ball on the end which takes the key of the fore and aft drag link to the steering gear; the other arm of the bell crank is bent down-



WINTON STANHOPE OF 1899 OR 1900, BEFORE ALTERATION BY AN AMATEUR.

ward and backward, and is bolted to the old hole in the horizontal arm of the steering knuckle where the old cross drag link was secured. This arrangement places the steering strains just where they were under the old plan of lever steering.

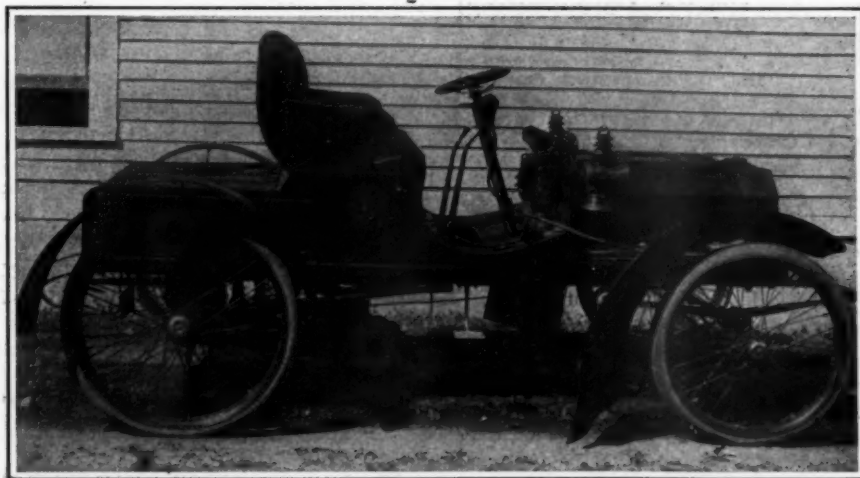
The front wheel ball bearings were cleaned and readjusted, no replacement being required. The differential had a case with wood ends and sheet iron body. It

and the body allowed simply to come up against it. A box front was produced by taking out the old gasoline and water tanks in the back of the body, and putting in a 10-gallon gasoline tank just in front of the dash. A 3-gallon water tank was fitted on top of a 32-ft. continuous coil radiator placed on top of the front cross member of the frame. The water tank is coupled to the radiator as a reservoir, and is not in the circulation. A Lobee gear pump, chain driven from the engine shaft at half

speed, was put in the line from bottom of radiator to bottom of engine jacket.

A wooden hood was fitted to cover the gasoline tank and the space between the dash and back of radiator and water tank, and contains a good, roomy tool box. With the tanks thus disposed, it was easy to cut 2 1-2 inches off from the top of the body, back of the seat. I also cut off an inch and a half from the bottom edge where it projected below the frame, making it look lighter and in better proportion. The screening in the cover board was replaced by solid panels, and the foot boards, which were screwed in from below, carriage maker's fashion, were taken out, raised an inch, and laid in from above so as to be easily removable. New sheet iron mud guards replace the old leather ones. The original seat was retained.

The engine had a new set of piston rings scraped to fit by hand, and the copper of the old water tank and brass of old gasoline tank were drawn upon to make a pan for the bottom and cover for top of crank space. New bronze gears were put into the transmission and a sheet iron pan fitted below it so as to stop oil drip as much as possible. The transmission was not otherwise changed, save as to the lubrication. The old cylinder oil cup has been replaced by a new pressure cup, and two multiple oilers replace the old oiling boxes, the one for the transmission being fitted on the frame over the gears and under the seat. The oiler for the engine is placed on the left side of the dash, and the pipes to the bearings are carried under the foot board.



RECONSTRUCTED WINTON, WITH NEW FRAME, SQUARE BONNET AND WHEEL STEER.

tance rods to the frame. The wheel base was lengthened from 70 inches to 88 inches, all of the increase being put in front.

For the old tiller, a bevel pinion and gear wheel steer was substituted. The vertical pivot of the left knuckle was lengthened to let the nut of a bell crank fit on it above

let in dust, and would not hold grease or oil. I had a new sheet iron case, grease tight, made for it, and put in a new second shaft, bronze bearings, pinion, and new sprocket wheel.

The leather dash was replaced by one of wood fastened by angle iron to the frame,

A new carburetor of the float feed type replaces the old one, and as this has a throttle and auxiliary air valve which are controlled from the steering post, the air pump and fittings of the Winton control have been taken out.

A spark advance was fitted by placing a wedge—controlled from the side of the seat—between the spark rod and the engine frame which, by forcing the spark rod away from the engine, makes it drop off the snap cam earlier in the revolution. A new sprocket on the engine shaft and new chain were also supplied. The ignition apparatus was not otherwise changed, except to add a spare battery and rearrange the items. A battery box with twelve medium-sized Columbia cells was fitted in the space formerly occupied by the water tank, and an Edison primary coil in a box with two-throw switch was placed on the dash. The battery and other connections are all of Packard cable with Herz terminals.

A six-inch Rushmore searchlight with Solar side lights and tail lamp, and the usual horn, form the lighting and signal equipment.

The whole car was repainted, the running gear automobile red, and the body Brewster green for the panels, with black mouldings.

The cost of the whole work, not including the time I spent myself, was \$254.89. No serious difficulties were encountered, the only troublesome thing about the new car being that the longer rear spring is in the way of the starting crank, which can only travel two-thirds of the circle; but as the obstruction is at the back of the circle of throw the difficulty is not serious. The original weight was 1,610 pounds, and the present weight is 1,840 pounds. In spite of the added weight, the change is all for the better. The car is quieter and has more power, due to the spark advance, and it rides and steers a great deal better and easier. It is not a modern car, of course, but it is a lot better than the cheaper class of machines.

In reply to the Editor's suggestion that my experience may be of use to others, I would say that the safest lesson to draw from it would be: Do not try to alter a car unless you know that the engine, transmission, and axle bearings are all right and in good condition. Make the alterations as few as possible to secure the result desired, and make drawings of all changes, also of car as changed, before you begin work on the car.

A French engineer has invented a power system which is certainly unique in many respects, and has applied it to a touring car. There is no change speed gearing, the gasoline motor being direct connected to the rear axle. Changes of speed are effected by a special system of throttling, and the reversing is effected by bringing into operation an extra set of cams on the motor, which cause it to run backward.

## M. Charley's Auto-Boat Prize Already Won.

The subject of the proposed power boat race across the Atlantic from Havre to New York is still actively discussed on both sides of the water, although it is treated with levity by many American launch owners. The French, however, with the probable exception of the astute M. Charley, who is doubtless laughing in his sleeve as he repeats Puck's famous soliloquy, have taken the matter with all seriousness and are gravely discussing ways and means. In a recent interview Chevalier Rene de Knyff, of the Panhard company, and the well-known driver of the Panhard cars, expresses the opinion that it is impossible to utilize "heavy petrol" as a fuel for such a race.

In view of the lively interest in launches in France and the prominence of French



M. CHARLEY, OF PARIS, AT WHEEL OF "MERCEDES IV."

constructors of both hulls and motors, it is rather remarkable that neither M. Charley nor Chevalier de Knyff is informed as to an event of recent occurrence which far outdoes all that France has yet accomplished in motor-boating. Ignoring for the time the loose and indefinite terminology which fathers but does not define such new terms as "auto-boat," "canot-automobile," "auto-launch" and "motor-boat," the plain fact is that the Atlantic voyage has already been made by a launch of small size propelled by an explosion motor and using a "heavy petrol" (kerosene) as fuel, as was told in THE AUTOMOBILE of September 17.

The launch was 38 feet over all, 33 feet on the load waterline, 9 feet in breadth and 3 feet 8 inches draft, with a freeboard amidship of 2 feet 3 inches. She had an almost plumb and straight stem and a small after overhang of the whaleboat type, and in model she was designed for the special

task in view. She carried a trunk cabin with side lights, and a fairly large cockpit. A small standing lug mainsail and leg-o'-mutton jigger were carried to steady her, but they were too small to drive her without the power.

The motor was built by the New York Kerosene Engine Company, and was of heavy construction, the fuel being kerosene and ignition by means of a cast-iron globe on the cylinder head; it was rated at 10-horsepower. The fuel tanks held 800 gallons of kerosene and there were also water tanks of 250 gallons capacity, in addition to oil, food and other supplies.

The *Abiel Abbott Low*, as she was named, sailed from College Point, Long Island, on July 9, 1902, manned by a crew of two—Captain William C. Newman and his sixteen-year old son, C. E. Newman. After an exciting passage, some bad weather being encountered, while a leak in the after oil tank gave serious trouble, she reached the West India Docks, London, on September 20 in good condition and all well, and, strange to say, with nearly half her oil supply still in the tanks.

It may be claimed that the *Low* was not strictly an "auto-boat;" she was built of ordinary white cedar and oak instead of mahogany veneer, she cost far less than the high-powered still-water racing boats of 1904, and she had no caned armchairs in her cockpit for her owner and his guests to recline in while running 23.647 knots; at the same time it must be admitted that she has achieved an original venture that is likely to overshadow any ocean performances of the more speedy and fragile craft for some time to come.

She proved that it is possible to cross the Atlantic safely, if slowly, in a very small craft propelled by an explosion motor, and she has shown the way to the construction, if it be necessary or desirable, of similar launches of much higher speed.

Thus far, after various additions and explanations of the original vague offer of 50,000 francs to the first "motor-boat" or "auto-boat" to cross the Atlantic, the whole project, if intended as a bona fide offer and not a mere advertising scheme, is still in a nebulous, not to say gaseous, state. It is now in order for M. Charley to inform himself as to the facts of the *Low's* voyage, and then, if he does not at once decide that she is entitled to his prize, to lay down exact, definite and practicable conditions as to dimensions and type of hull, speed, power and fuel.

The English auto-boat *Napier Minor* was used, during a recent attempt to swim the English Channel, to carry reports from the swimmers to the shore.

"What is that quotation about beggars? Something about 'wishes' and 'horses,' don't you know?"

"Oh, yes. 'If wishes were horses beggars would want automobiles.'"—*Catholic Standard-Times*.



## Correspondence

### Balancing a Single Cylinder Engine.

Editor THE AUTOMOBILE.

Sir:—What is the right way to balance a single-cylinder, horizontal gasoline engine for automobile use—to put a balance on the crank, to balance the piston and rod, or to balance the shaft with the flywheels on?

N. B.

Allentown, Pa.

The balance weights should be on the cranks, opposite, of course, to the crankpins, and should balance the cranks and crankpin plus the crank end of the connecting rod. Some builders made the balance weights heavier than this, but they should not do more than balance the connecting rod in addition to the cranks and crankpin.

### Proper Grade of Gasoline.

Editor THE AUTOMOBILE.

Sir:—Please advise what the effect would be on a gasoline engine to use 76 gasoline in same.

C. H. T.

Henderson, N. C.

As 76 degree gasoline is commonly considered the most desirable grade for use in explosion motors, and is not used universally only because it costs more than the lower grades and is less readily obtained, it is highly probable that if your spark is right and the carbureter is adjusted properly your engine will develop plenty of power.

### Valve Dimensions and Lift.

Editor THE AUTOMOBILE.

Sir:—Will you please give me a little information on the design of a four-cylinder auto engine? The one I have in view is of 3 3/4-inch bore by 4 1/2-inch stroke, and I would like to have it develop 16 horsepower at 1,200 revolutions per minute. What size should I make the valves, the intake being mechanical? State, too, the required lift of each. In this case, what proportion should I make the compression chamber?

R. P. H.

Indianapolis, Ind.

The valves may be 1 1/2 inches diameter in the clear and lift 1/4 inch for the inlet and 5/16 inch for the exhaust. The volume of the compression chamber should be about 3-10 of the volume swept by the piston, or say 15 cubic inches.

### Passing Horses on the Road.

Editor THE AUTOMOBILE.

Sir:—I have read the letter in your issue of September 3 by "Dejected Despondent" in regard to meeting frightened horses on a country road, and I am positive that there is no occasion for others to feel as nervous as he does, provided they know what to do under such circumstances. It is true that one out of ten country drivers are much

more frightened than their horses when an automobile appears, and their actions work the horses up to a nervous pitch about as much as does the machine, but occasionally a horse will be met that shows with absolutely no doubt that he is thoroughly afraid, and this type is nearly always encountered where the road is narrow.

Trouble is sure to follow an attempt to pass such a horse unless the proper diplomacy, or "horse sense" is used. After having turned out as far as possible and stopped the engine, the next thing to do is to remove your goggles and pick a large handful of grass, giving the horse a nibble or two and then begin to lead him toward the machine, at the same time talking to him in a reassuring manner. As he gets nearer feed the grass oftener, and talk and feed continuously while passing the auto, and do not let go of the bridle. It is important to take a bunch of grass which will be large enough to last through the feeding process. In fact, the larger the bunch the better.

This method may be an old one to many of your readers, but, like many other simple things, it is well worth trying by any one who does not know a better plan. I have led past my car horses that were just getting ready to climb trees before the grass idea was applied. In fact, I have yet to find a case where it has not worked beautifully.

It is not a bad scheme to have covers made for the lamps, to be kept on during the day time. A friend of mine claims to have proved conclusively that the shining brass on the lamps has more to do in scaring a horse than anything else about the automobile. At night, fortunately, the danger is much less, and it is not necessary to cover the lights. A horse is not an absolute fool, and consequently is not apt to run away after dark, because he cannot see very well where he is running.

Observation will soon teach an auto driver how near he can approach a horse before it is necessary to stop the engine, but do not wait too long before doing so. A little consideration of this sort will do wonders towards producing a better feeling among farmers towards the automobile.

G. G. C.

Pittsfield, Mass.

### Engine for 1,200 Pound Touring Car.

Editor THE AUTOMOBILE.

Sir:—I have under construction a touring car to weight complete, without engine or transmission, about 1,200 pounds. Would a three-cylinder, four-cycle engine of the following specifications be heavy enough for the car; and, also, would a motor of these dimensions be likely to give good service—in other words, is it correctly designed?

Weight, 250 pounds; bore, 4 inches; stroke, 4 inches; size of inlet and exhaust valves, 1 5/8 inches, both mechanically operated; diameter of crankshaft, 1 7/16 inches; of wristpin, 1 5/16 inches; of camshaft, 3/4

inch; of flywheel, 16 inches (weight 70 pounds); face of flywheel, 2 1/2 inches. Normal speed, 900 revolutions per minute. Cylinders cast together. Crankshaft has three bearings about 3 inches diameter. Diameter of clutch flange, 8 1/2 inches; face, 1 1/2 inches. Shall use a three-speed sliding gear transmission with cross shaft drive.

Please tell me if having the three cylinders cast in one is likely to give good results. Is the clutch flange large enough to prove efficient, and what power will the motor develop, approximately?

R. H. B.

Middletown, Conn.

In the main, the above proportions are good. If by wristpin you mean crankpin, it would better be at least as large as the shaft. Your clutch, if of the conical, leather-faced type, should be as large as the flywheel rim will accommodate. It would not be a bad plan to make the rim 3 or 3 1/2 inches wide and correspondingly thinner, to give room for a good-sized clutch. The motor should develop 11 or 12 horsepower at normal speed of 900 revolutions per minute.

### Car for Physician's Use.

Editor THE AUTOMOBILE.

Sir:—Which do you think the cheaper to operate and keep in repair, the gasoline or the electric machine, to be used in the city by a physician?

A. A. R.

Philadelphia.

The question you ask is practically unanswerable, as so much depends upon the owner. Under the most favorable circumstances the upkeep of one car would perhaps not be very different from the other. Many physicians favor the gasoline car, one reason in favor of it that appeals to them being its availability for use at any time, day or night, for if the machine is in running order all that is necessary is to put fuel in the tank and oil in the lubricator, and it is ready to start; whereas in the case of an electric vehicle, a physician having used the machine all day, and so run down the battery, might have a hurry call at a time when the car was being charged and not in condition to use.

Again, a gasoline car can be used for pleasure purposes as distinct from professional work in making trips or tours about the surrounding country, while the electric vehicle is not very well suited for such work. Its radius of action is comparatively small, its hill-climbing powers not very great, and the uncertainty of finding charging stations has also to be considered. The modern gasoline runabouts are very reliable, and with any sort of fair treatment would give you very great satisfaction. The electric vehicle is ideal for purely pleasure purposes in which one can select one's own time for a trip, but as an emergency vehicle it is subject to the disadvantages stated.

## New Middleweight World's Records.

### Joseph Tracy Establishes Figures from Two to Ten Miles at Empire City Track with W. G. Brokaw's Renault.

**S**ATURDAY'S race meet at the Empire City track, near Yonkers, was remarkable in a number of ways. The reputation for well-conducted racing by the best talent and fastest cars in America that has been earned by the management of this track, drew out what is believed to be the largest crowd of spectators that has ever gathered at this or any other track in the metropolitan district to see automobile races. A count of the admission tickets showed more than 10,000 paid admissions. A thorough sprinkling of the track at 11 a.m. and subsequent rolling so effectually laid the dust, without making the surface of the track

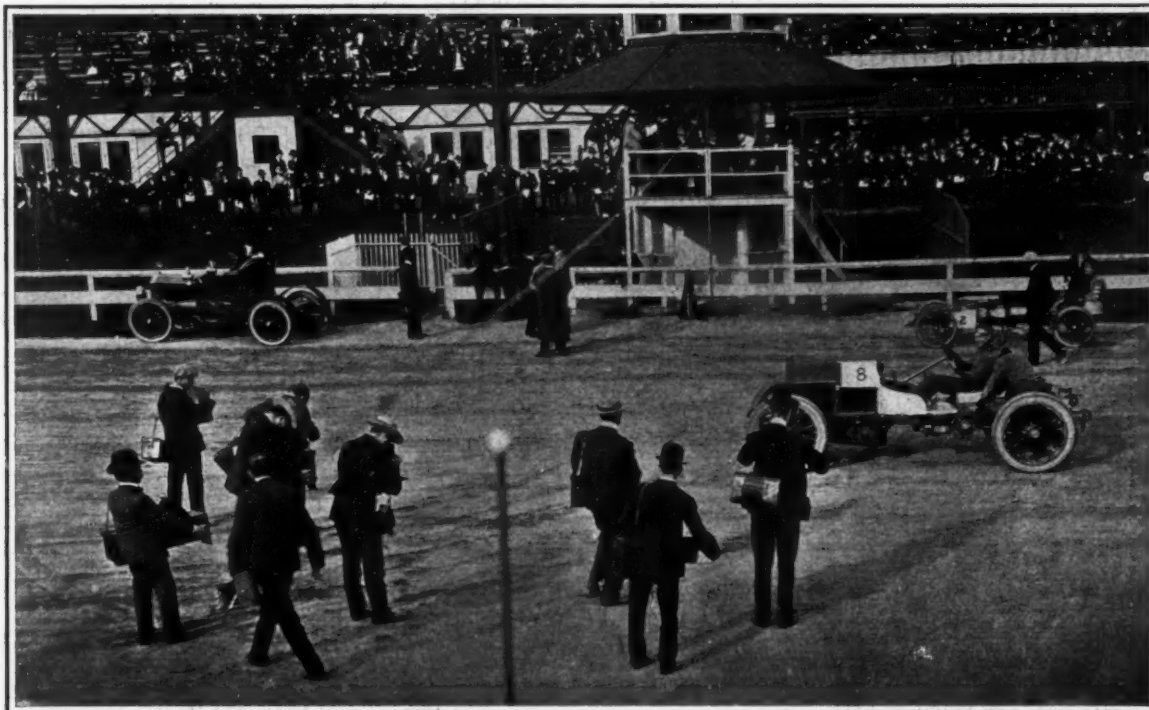
of it, to the number of 450. Touring cars vastly predominated, and the majority of these had canopy tops, Cape cart hoods or enclosed bodies.

#### TRACY BREAKS WORLD'S RECORDS.

Despite the fact that two of the star attractions—Carl Fisher's Premier *Comet* racer and H. L. Bowden's 90-horsepower Mercedes—were unable to compete owing to serious injuries sustained in practicing on the track the day before the races, the competition had remarkable features of its own. Foremost among these was the breaking of world's track records from two miles

which were taken close and without any lessening of speed, the wheels skidding all the way around the big curves.

Much interest centered in the International Cup race, as the novel idea of running the heats off by countries had been adopted. The nations represented were Italy, Germany, United States and France. Only two of the heats could be run off, as there was but one American and one German car to compete. The breaking of the crankshaft of the eight-cylinder air-cooled *Comet* on Friday left the Ford racer to defend the stars and stripes, and the breaking of two cylinders in H. L. Bowden's 90-horsepower Mercedes left E. R. Thomas's 60-horsepower Mercedes as the only German representative. An attempt to improve upon the Cannstatt Daimler construction by boring out the cylinders to increase the power to 100 horsepower had so weakened the cylinders that in a speed trial on the day be-



EMPIRE CITY TRACK FROM THE INNER FENCE—Newspaper Photographers "Shooting" E. E. Hawley in E. R. Thomas's Mercedes.

slippery, that at no time during the races did the dust become objectionable to the contestants or dangerous.

The weather was deliciously cool with a moderate wind blowing, the lawn between the grand stand and the track was kept entirely free of spectators and their cars, there were no tedious delays between races and the events were run off in the order of the program. No one was allowed upon the track but the starter, announcer and the newspaper photographers, of which there were on hand the largest number that has ever attended such racing probably anywhere in America, no less than fifteen at a time being seen on the track.

Never before were so many spectators' automobiles gathered at a race meet in America. They were all parked under the grand stand and on the spacious lawn back

to ten miles inclusive by Joseph Tracy with W. Gould Brokaw's Renault in the middle weight class, lowering the records made by M. G. Bernin with the same car on the same track July 18 last. The power of this machine is variously estimated at 30 and 40 horsepower.

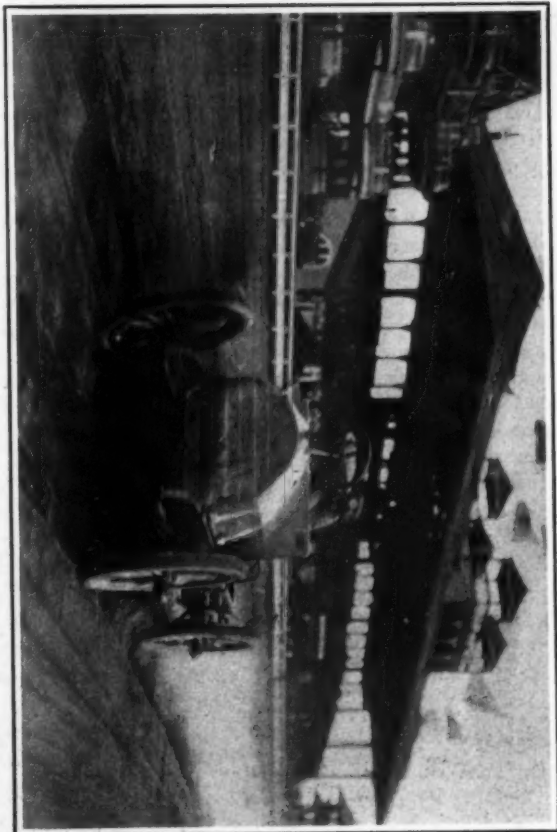
Tracy's records were made in the fourth heat of the International Cup race, which he won in a walkover, and in the final of the same race, in which he promptly took the lead from E. E. Hawley in E. R. Thomas's 60-horsepower Mercedes at the start, and steadily increased it during the first four or five miles to an eighth of a mile, at which distance Hawley hung with determination to the end of the ten miles. Tracy's record time was 10:01 2-5, exactly twelve seconds lower than the former record. The time was all saved on the turns,

fore, in which it was said a mile had been done in 54 and a fraction, the two forward cylinders cracked circumferentially clear through the walls immediately above the flange by which they were bolted to the crankcase. Herr Jellineck's design does not leave any superfluous metal at this point. These two accidents caused no little disappointment, as the cars were among the fastest in America, and had in addition to other races been entered in a special pursuit match race at ten miles.

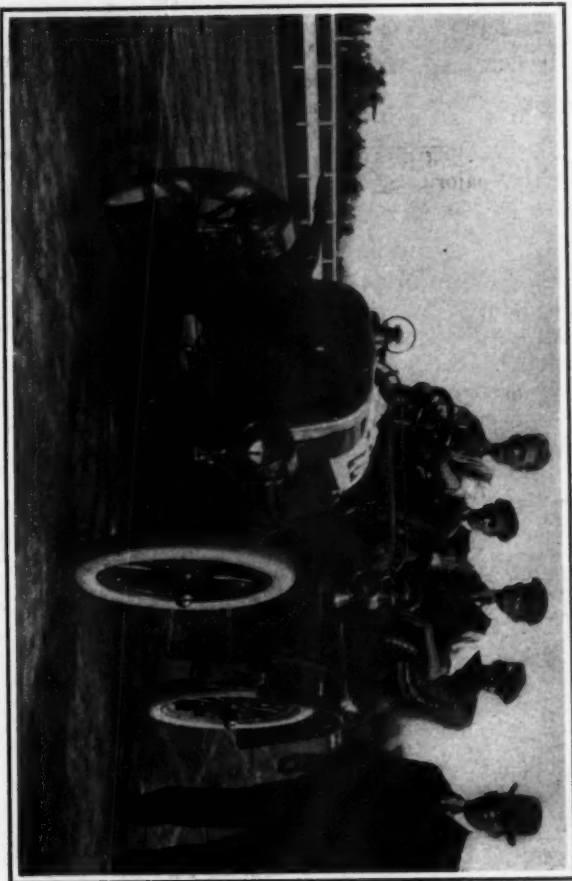
#### SARTORI WINS THE HANDICAP.

The Great Empire Handicap five-mile race proved a farce owing to excessive handicaps being given the small cars. The first heat was carried off by Paul Sartori, driving a 24-horsepower Fiat, with a handicap of 1 minute 20 seconds; Charles

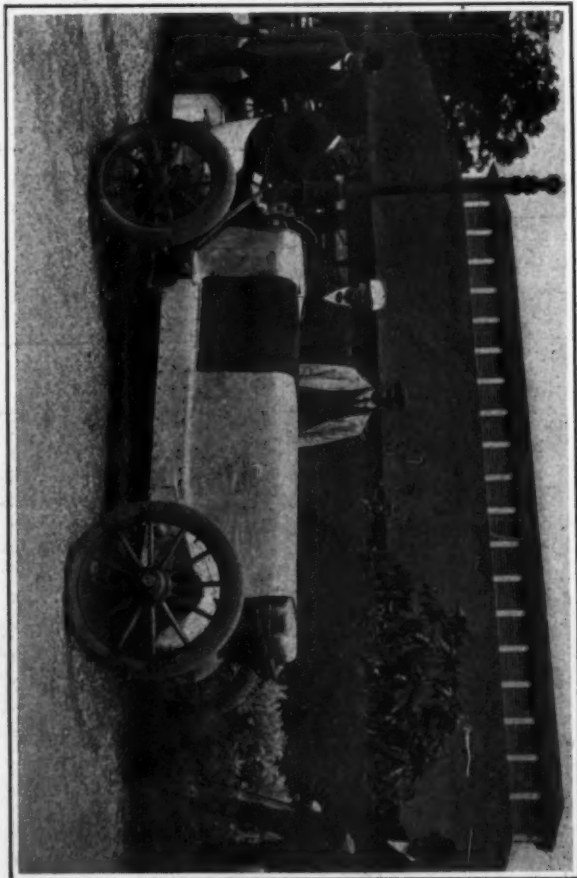




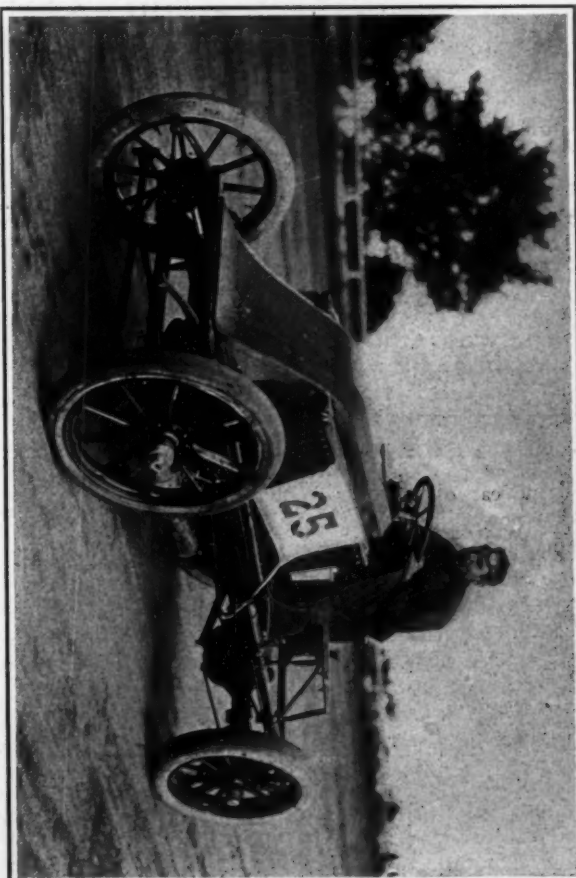
Paul Sartori, Winner Empire City Handicap Skidding on the Turn.



Charles Soules in Pope-Toledo, Winner Five-Mile Touring Car Race.



Walter Christie in His New Front-Drive, Front-Steer Racer.



Joseph Tracy, in Brokaw's Renault, Winner International Cup in Record Time.

SNAP SHOTS OF WINNERS AND NOTABLE CARS AT THE RACE MEET AT EMPIRE CITY TRACK, YONKERS, SATURDAY, SEPTEMBER 24.

Soules, Pope-Toledo 24 horsepower, ran second with a handicap of 1:15 and A. E. Morrison, Peerless 24 horsepower, was third with a handicap of 1:15. Joseph Tracy drove the 36-horsepower Royal, which he is to drive in the Vanderbilt Cup race, and although it had not yet been properly tuned up, it showed good speed—insufficient, however, to overcome the big handicaps of the other cars. His handicap was 25 seconds. The second heat was won by A. J. Seaton in a 15-horsepower Buckmobile, with the advantage of a handicap of 4 minutes 16 seconds, which allowed it to make more than a complete circuit of the mile oval before any of the other contestants was sent away from the tape, the starts in all cases being from a standstill at the tape. Tracy, who started in the Renault with a handicap of 8 seconds over

started, by the unexpected way in which it humped up in the middle several times as the result of the sudden pull on the driving chain and the great flexibility of the springs, the action simultaneously striking the on-lookers as most appropriate to the name of the car.

In the final the Renault finished last, in fifth place, while the first prize went to Sartori in the 24-horsepower Fiat in 8:02 1-5. Lee took second with the Pope-Toledo and the Buckmobile third.

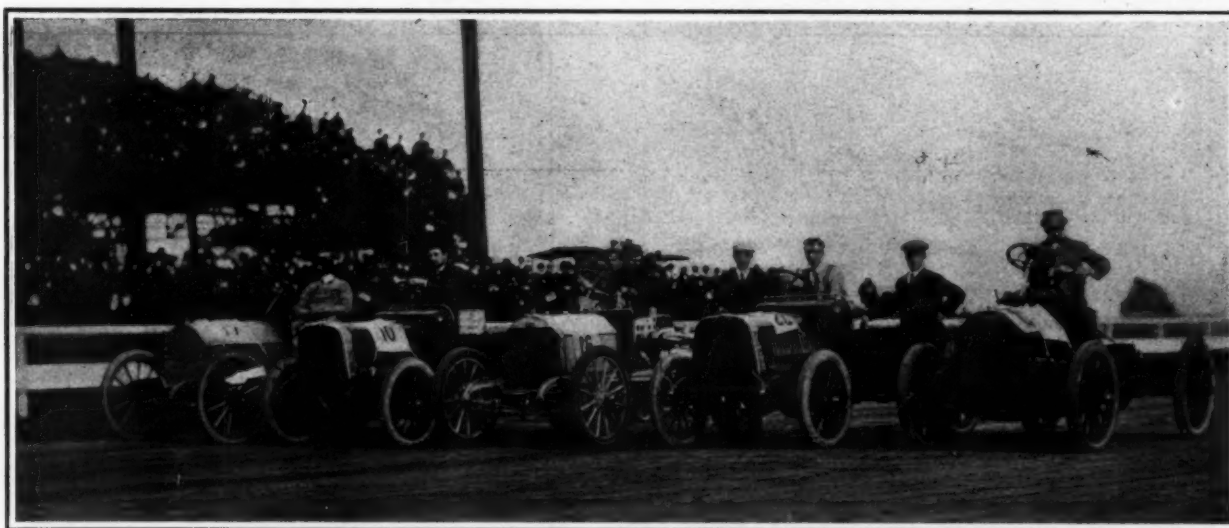
#### TOURING CAR RACE INTERESTING.

The Old Glory Cup race for touring cars developed considerable interest. There were four starters, and each car was required to carry three passengers in addition to the driver, who had to crank his engine, start the car and drive five miles. The interest-



TRACY SKIDDING INTO HOME STRAIGHT.

Among the spectators at the meet were Clarence Gray Dinsmore, representative in Europe for the Automobile Club of America, and G. Heath, winner of the Circuit des Ardennes this year and driver of one of the



LINE-UP OF BIG CARS FOR THE FIVE-MILE HANDICAP.

Left to Right: Sartori (Fiat 24-hp.), Lee (Pope-Toledo 24-hp.), Wallace (Fiat 24-hp.), Soules (Pope-Toledo 24-hp.), Morrison (Peerless 24-hp.).

Thomas's Mercedes, drove fast enough to put up a new world's record of 5:04 in his class, yet he finished only in third place, A. S. Lee in the Pope-Toledo running second and the Mercedes fourth. The Buckmobile elicited a good-natured laugh, when it

ing feature was the close contest between Charles Soules in the Pope-Toledo and A. E. Morrison in the Peerless. Morrison trailed Soules for several miles only a length back, but Soules won with a lead of forty feet in 7:12 3-5.

Panhard in the forthcoming Vanderbilt Cup.

Following are the summaries of the afternoon's events:

"Yonkers Cup," five miles for regular stock cars selling for \$1,000 or less—Rodney Peeler (Autocar 10-hp.), 1st; R. M. Alexander (Pope-Hartford 10-hp.), 2d; A. J. Seaton (Buckmobile 15-hp.), 3d. Time, 8:15 3-5.

"Old Glory Cup," five miles for American touring cars carrying three adult passengers in addition to operator, driver to crank motor, start car and drive entire distance—Charles Soules (Pope-Toledo 24-hp.), 1st; A. E. Morrison (Peerless 24-hp.), 2d; A. S. Lee (Pope-Toledo 24-hp.), 3d. Time, 7:12 3-5.

"Knickerbocker Cup," ten miles for cars weighing 881 to 1,432 pounds—Joseph Tracy (W. Gould Brokaw's 30-hp. Renault), 1st; Frank Kulick (Ford 20hp.), dropped out end of third mile; H. R. Lounsbury, Jr., (Meteor 30-hp.) dropped out at end of first mile. Time, 10:15.

"International Cup," ten-mile free-for-all, heats run by countries at five-mile distances—First heat, Italy—Paul Sartori (Fiat 24-hp.), 1st; E. K. Wallace (Fiat 24-hp.), 2d. Time, 6:21 4-5. Second heat, Germany—Not run, owing to broken cylinders on H. L. Bowden's 90-hp. Mercedes, given by default to Edward Hawley (E. R. Thomas's 60-hp. Mercedes). Third heat, America—Not run, owing to broken crankshaft on



H. L. BOWDEN'S 90-HP. MERCEDES "FLYING DUTCHMAN," THAT CRACKED TWO CYLINDERS IN PRACTICE ON FRIDAY.



Carl Fisher's 32-hp. Premier racer, given by default to Frank Kulick (Ford 20-hp. racer). Fourth heat, France—Joseph Tracy (Renault 30-hp.), 1st; Felix Troger (M. C. Herrmann's 70-hp. Panhard) quit at three-quarters mile. Time, 5:08 3-5. Times by miles, 1:04, 2:03 2-5, 3:03 2-5, 4:08 4-5, 5:08 3-5.

Final heat, ten miles—Joseph Tracy (Brokaw's 30-hp. Renault), 1st; E. E. Hawley (Thomas's 60-hp. Mercedes), 2d; Paul Sartori (Fiat 24-hp.), 3d. Tracy's time, 10:01 2-5. Times by miles, 1:02 3-5, 2:02 3-5, 3:02, 4:01 3-5, 5:01, 6:01 2-5, 7:01 3-5, 8:02 1-5, 9:02 1-5, 10:01 2-5, all world's records for middle weight cars from two miles up, inclusive, breaking records made by M. G. Bernin with the same car on the same track July 18, 1904. Hawley's time, 10:07 4-5.

"Great Empire Handicap," five-miles—First heat—Paul Sartori (Fiat 24-hp.), handicap 1:20, 1st; Charles Soules (Pope-Toledo 24-hp.), handicap 1:15, 2d; A. E. Morrison (Peerless 24-hp.), handicap 1:15, 3d. Time, 6:10 1-5. Second heat—A. J. Seaton (Buckmobile 15-hp.), handicap 4:16, 1st; A. S. Lee (Pope-Toledo 24-hp.), handicap 1:15, 2d; Joseph Tracy (Renault 30-hp.), handicap :08, 3d. Time, 8:22 3-5.

Final—Paul Sartori (Fiat 24-hp.), 1:20, 1st; A. S. Lee (Pope-Toledo 24-hp.), 1:15, 2d; A. J. Seaton (Buckmobile 15-hp.), 4:16, 3d; Charles Soules (Pope-Toledo 24-hp.), 1:15, 4th; Joseph Tracy (Renault 30-hp.), :08, 5th. Time, 8:02 1-5.

## Photos of Dust Clouds.

### Special Correspondence.

LIVERPOOL, Sept. 16.—After being postponed several times owing to the weather, the trials of the Dust Committee of the A. C. of Great Britain were held Saturday, September 10, on a private road near Guildford, Surrey. There was not much dust on the road, but flour proved a good substitute. A 24-horsepower Dennis chassis was used and this was fitted in turn with numerous removable bodies. The car was run at a speed of thirty miles an hour over a twenty-yard stretch of flour-strewn road with each body fitted, and photographs were taken of the dust clouds raised. A "standard" cloud was provided by a 10-horsepower Decauville, which patrolled the course at a uniform speed at intervals. More than fifty sets of photographs were obtained, and results of considerable value may be expected from them. The official report will be issued shortly.

## DEMONSTRATION FOR COUNCILMEN.

### Special Correspondence.

WILMINGTON, Sept. 26.—In order that they might act intelligently upon the proposed automobile ordinance, the members of the City Council were given a ride around the city in automobiles Saturday afternoon, as guests of the Delaware Automobile Association, whose machines were placed at their disposal. The trip included scorching and slow running. The ordinance is in the hands of one of the members of the council and will probably be presented at the meeting next Thursday.

**Eighteen automobiles are owned and operated by the residents of Mobile, Ala.**

# Headlights and Night Driving.

By JOSEPH TRACY.

**H** EADLIGHTS do not make fast night driving safe—they simply make it possible. The exercise of common sense is still necessary in these days of powerful gas lamps for automobiles. On these statements most automobilists are agreed—theoretically. When it comes to their practical application, however, many automobilists forget. Given a combination of skill in driving, presence of mind in emergencies and acetylene lamps, good time can be made on the road at night, but the risk caused by the unexpected remains. This produces far more mental strain and bodily fatigue in driving a given distance at night than would result in covering the same ground in daylight.

Under any circumstances fast driving at night should not be attempted unless the car is equipped with powerful acetylene lights, which are in perfect working order, and, even with such an equipment of lights fast driving should not be attempted unless one is very familiar with the route to be gone over. Many drivers do not fit their lamps properly to the car. To be really effective the lamps should be fixed on the brackets in such a position that when lit the beams of light from them will be practically horizontal when the car is on level ground.

As is very generally known the light from acetylene lamps casts very dark shadows, a characteristic which this light shares with the ordinary electric arc lamp. For this reason a road which is only slightly rough in its surface will appear to be very much more so when viewed by the light from the acetylene lamps. When a driver gets accustomed to this illusion he is likely to become careless and take it for granted that when a road appears very rough, under the beams from the lamps, it is in reality only slightly so. Thus when a stretch of bad road is encountered the driver is likely to make an error of judgment and to attribute the apparent roughness of the road to the peculiar effects of the light and, under the assumption that the road is good, high speed may be maintained until the wheels strike a ridge or hole so forcibly as to bend an axle or break a spring.

In driving at night particular care should be taken in going around turns. A rear end collision with a preceding car is easily possible on a sharp turn, especially if the car ahead does not carry a rear light. A moment's reflection shows that when the car is rounding a curve the headlights will show on the road only for a very short distance ahead, depending entirely on the radius of the curve. It follows as a consequence that if a car or other vehicle is rounding a curve just in front it will not be seen until the following car is very close, so close indeed that it may be practically impossible to stop soon enough to prevent a bad smash up. On dry roads it is usually very easy to tell

when catching up with another car, or horse drawn vehicle, as the dust raised by the vehicle ahead is easily discerned when the beams of the gas lamps fall upon it. It should be an invariable rule to slow down a car when running into dust, and at the same time keep a sharp lookout. It is necessary also when passing a number of teams or wagons going in the same direction to exercise great care, especially when the roads are dusty. Teams and wagons often raise a cloud of dust and when the automobilist is passing through this a horse or unlighted vehicle coming in the opposite direction may be met and a collision result.

In the night time objects do not come into view progressively, as it were, as in the day time. When approaching an object in daylight it first appears small and indistinct, and gradually increases in size as one gets closer. When driving at night, however, with the aid of gas lamps, objects appear to flash into sight suddenly—appearing to leap out of the darkness. The suddenness of this appearance is intensified as the speed of the car is increased.

When driving at night it is "up to" the automobilist to exercise great consideration for other road users. Horses are easily frightened by the dazzling rays from the acetylene lamps. Frequently a horse that is met refuses to go by, and the best thing to do under such circumstances is to stop the car and get out and station a person in front of each lamp, with the body close against the glass so as to cut off all the light rays.

When driving at night it is well to avoid looking at the gas lights on an approaching car, or electric or other brilliant lights on the roadside. The powerful rays of such lights dazzle the eyes and prevent the driver from seeing the road in front. So-called "search lights" are coming into use very extensively. These can be moved by hand so as to throw a beam of light to either side of the road, or above or below the horizontal plane. It seems hardly necessary to say that the driver should not attempt to manipulate a search light, but that it should be handled by another person who will give his entire attention to the lighting of the road. Courteous treatment of other road users, and of residents along the route traversed will confine the use of the search light to its intended purpose of road illumination, and it will not be used to scare inoffensive persons.

Care should also be taken when a car is stopped on a road that it is moved as far to the right as possible so that the glare from the lamps will not annoy drivers of automobiles or horsedrawn vehicles.

**Forty automobilists of Racine, Wis., have complied with the city ordinance and have registered their machines with the city clerk.**



VOL. XI.

No. 14

Published every Saturday by

THE CLASS JOURNAL CO.,

Flatiron Building, Madison Square,  
NEW YORK CITY.Cable Address - - - Autoland, New York  
Long Distance Telephone - 300 Gramercy, New York

## SUBSCRIPTION RATES:

United States, Canada and Mexico, - One Year, \$2.00  
Other Countries in Postal Union, - One Year, \$3.00To Subscribers—Do not send money by ordinary mail.  
Remit by Draft, Post-Office or Express Money Order,  
or Register your letter.

## FOREIGN SUBSCRIPTION AGENTS:

ENGLAND:—Liffe & Sons, Limited, 3 St. Bride Street,  
Ludgate Circus, London, E. C.FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque,  
Paris.

GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements should reach us not later than 5 o'clock p. m. Monday for the issue of Saturday following.

Copyright, 1904, by The Class Journal Company.  
Entered at New York, N. Y., as second-class matter.

The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

Copies Printed This Issue, - - 12,000

" " Since Jan. 1, - 482,000

**The American Entries.**

One week from to-day the great International road race on Long Island for the William K. Vanderbilt, Jr., Cup will be lost and won. Against great odds, both in the experience of building road-racing cars and in driving them at high speeds on the roads in competition, the American entries will start and endeavor to keep the cup on this side of the Atlantic. Four American owners, in a spirit of pure sportsmanship, have entered five cars in the race. With the possible exception of one machine, none of the cars was constructed with a view of taking part in this or any other long-distance event. The American team includes two Pope-Toledos, entered by Col. Albert A. Pope; the famous *Gray Wolf*, entered by the Packard Motor Car Co.; a Smith & Mabley Simplex, entered by the owner, Frank Croker, of New York, and the Royal Tourist, entered by C. A. Duerr, New York agent of the builders. With the exception of the new and untried Simplex, all of the cars entered have been tried out in track competition, and have made a splendid showing. The strong belief, therefore, of their owners in the merits of these cars, which is shown by their entry in the Cup race, is warranted by excellent past performances, and, barring accidents before or during the race, each ought to do credit

not only to the builders, but to America as a whole, for it is as national champions that the cars enter the race.

The dark horse of the American team is the Smith & Mabley Simplex, the first large car turned out by the builders, who have only recently undertaken the actual construction of automobiles in their own plant. A careful examination of this car, however, shows that in construction it is in the highest class, and the performance of the type of motor with which it is fitted is familiar to those who have followed the season's auto-boat racing.

It is a pleasure to be able to note that while the entrants display confidence in their machines to make a creditable showing, they have not indulged in boastings, and the only gas that each will carry into the race is that which the carbureters can produce. Indeed, both the home and foreign teams display a fine reticence in this particular that is suggestive of good sportsmanship and tremendous effort on the day of the race.

In calling attention to the want of experience of our own representatives in road racing we do not wish to be understood as offering excuses for probable defeat. Each car in the American team will start to do two things: first, to win, and second, to finish. A cold-blooded, unbiased comparison of what each car of the four competing nations brings to the race cannot give to America even a possibility of winning. The chances of the race may upset all calculations, but we seriously doubt if any of our team really wants to win the race by chance. To finish "strong" will be glory enough, and will properly carry with it a tremendous prestige.

In considering the character and number of the American entries the brief history of this cup contest must be taken into account. It was only last spring that the first announcement of the intention to donate such a cup was made. In April it was announced that the race would be held in July, and not until the meeting of the committee on June 7 last was the date finally advanced to October 8. Even then there was no practical certainty that the race would be held, for permission to use the roads in Nassau county was not obtained until August 23, and the consent of the New York municipal authorities to use the portion of the course that lies within their jurisdiction did not come until the middle of September.

There are two points in the Vanderbilt Cup race course which it would seem to be the imperative duty of the A.A.A. racing board to have put in better shape before the day of the race. One is the sharp turn—considerably sharper than a right-angle—from the Massapequa road

into the Bethpage turnpike, near Plain Edge. We have referred to this turn several times in describing the course, and it is without question the most dangerous spot, for the competitors at least, in the entire thirty miles. This is not simply on account of the sharpness of the angle, but because of the narrowness of the road surface and the impossibility of leaving it even for a foot or two, without inviting disaster. Inside the angle is a rough ditch several inches in depth, which comes close to the road and is hidden by grass and weeds. Further inside the angle is a tree. It is impossible to cut the corner, and one must slow down to ten or fifteen miles to make the turn at all. The tree should be cut down, if possible, and, at any rate, the angle should be filled in and leveled close to the tree.

The other danger point is the culvert near the church, in Hyde Park. This culvert, which rises considerably above the road surface, is encountered at the bottom of a little descent, which would almost compel high speed unless anticipated considerably in advance. If any car takes it at racing speed it is hard to foresee any better result than broken springs. It would be perfectly easy, with a load or two of crushed stone, to make this point safe.

**Auto-Boat Season's Lessons.**

On three days last week races for the gold challenge cup of the American Power Boat Association were held on the Hudson River in New York, and practically closed the auto-boat season in home waters. An extensive report of the races will be found elsewhere in our news pages.

In the races the auto-boat *Vingt-et-Un II* was a winner, and by her consistent performances in varying and unfavorable conditions of wind and water added to the reputation she had acquired earlier in the season.

The results of the season just closed, if there be any, are to demonstrate the fact that an auto-boat race cannot be won by motors alone. This seems an obvious fact. It was not sufficiently obvious, however, to prevent the construction of boats in which all considerations of seaworthiness were subordinated to the mere flotation of a powerful motor, with the expectation that somehow, in some mysterious way, the power of the engine would produce forward motion in excess of anything hitherto known, and that in every variation of weather. These boats had their origin in the emotions. Cold reason and scientific fact contributed little to their construction, and the inevitable result was disappointment. It takes more technical training than one would casually suppose to teach the unlearned that in marine con-



struction eccentricity of design, plus egotistical disregard of available knowledge, does not total superiority of results.

The perfection of modern design in sailing yachts and steam vessels is the result of a slow and laborious process of evolution. The defender of the *America's Cup* of to-day is a wide departure from the earlier models, and yet an examination of the plans of all the international race contestants will show a gradual progress of design, rather than any sensational change from the old to the new.

A sound motor in a sensible hull is the combination that will give a consistent performance, and will in the long run bring credit to all concerned. No fancies of inventors, nor whittled-out-rule-of-thumb models can hope to outclass the thoroughly considered plans from the board of the trained designer.

There are tremendous difficulties in the problem, to reconcile all the varying and conflicting components. Every successful boat is a compromise, and the secret of its success is the nicety of balance of the various elements of design.

Some of the chief faults of the season of 1904 include: Boats without flare at the bows that are speedy in smooth water, but are compelled to slow down in rough weather. Hulls with long overhang at the bow, which represents so much dead weight and adds nothing to the effective water-line length. Boats with little freeboard and open cockpits fore and aft, or with the most flimsy and unseamanlike covers that do not keep out the spray, nor to speak of green water. Boats overpowered and lacking in stiffness of hull. These and other minor defects are almost the rule, rather than the exception.

It is some consolation, perhaps, that faults such as referred to are not confined to boats of domestic build, but that many such have been turned out abroad. Owners and builders have been too ambitious. For the sake of the future of this most interesting sport it is to be hoped that owners will begin to appreciate that the automobile engineer must collaborate with the naval architect to produce the results they desire.



Reports of the races at Providence, R. I., held September 10, gave the distance of the exhibition ride by Tom Fetch in the Packard 1,000-mile non-stop car as three miles, whereas it should have been five miles. The time was 6:43 2-5, which figures out at 1:23 2-5 to the mile for a regular 24-horse-power touring car.

Ethan Sly and wife went through on the crossroad east of Blue Fly Sunday with their automobile, after a call on Charles Stacey, the first to pass through with an auto.—*Norwalk (O.) Chronicle*.

## KANSAS CITY LICENSES.

### Examiners Will Not Grant Them to Inexperienced Drivers After October 4.

*Special Correspondence.*

KANSAS CITY, Sept. 26.—Kansas City motorists may scorch until October 4. On that day the board of examiners provided for in the ordinance passed September 3 will hold its first formal meeting, and devise methods to torture the driver who would secure a license.

The motorist must have four qualifications before he can drive his car on Kansas City streets. These are "skill," "experience," "capacity" and "sobriety." Members of the board do not explain how they are to reconcile a man's capacity with sobriety, but they think they can. Also they do not know how a man is to get experience without driving his car, yet they will not let him drive unless he has experience.

"The whole thing looks something like the story of the girl who wanted to go swimming," said Mayor Neff, after a conference with Louis Curtiss, a member of the board. "She did not want to go into the water until she had learned to swim."

After October 4, the board is to meet the first Wednesday of each month. Arrests are to begin after the first meeting, unless some motorist enjoins the city from enforcing the ordinance until a test case brought by Fred Patee is decided. An injunction is spoken of in some quarters.

The fight between Kansas City authorities and the local motorists over the enforcement of the automobile ordinance began last Wednesday, when Fred Patee, manager of the local Cadillac Automobile Company, was fined \$10 in Central Police Court on charges of violating the ordinance. It was alleged that Patee had driven his car in excess of twelve miles an hour; that he had carried no lights at night; that he failed to heed the signal of a driver whose horse he is said to have frightened, and refused to give his name after the accident; that he carried no license number; that he ran abreast of another automobile for five blocks and that he had not appeared before the board of automobile examiners to establish his fitness to operate a car.

As the board of examiners has had no regular meeting since the passage of the ordinance, September 3, and has examined no motorists, it seems that the city has overreached itself in this last particular.

Patee has given notice of an appeal and declares that he will fight the case in order to determine whether or not the city has the right to make onerous restrictions on motorists. The license feature, especially, will be attacked.

## CROSS COUNTRY RUN.

### Conditions Governing Unique Contest of Philadelphia Club Members.

*Special Correspondence.*

PHILADELPHIA, Sept. 26.—The conditions which will govern next Saturday's second annual "Cross-Country Run" of the A. C. of Philadelphia are as follows:

- 1.—The contest is open for members of the Automobile Club of Philadelphia only.
- 2.—Competing machines must be run by members, except that a member engaged in the automobile trade and not personally owning a machine may operate the machine that he is in the custom of running.
- 3.—The run is open to all classes of motor vehicles.
- 4.—Cars must be in full touring trim, and carry the maximum number of passengers that it is designed to carry.
- 5.—

The winner to be the member making the trip from this city to Ambler, to Phoenixville, to Westchester, to City Hall (Philadelphia) in the shortest time. 6.—The route to be selected by the member. 7.—The event is not to be a race, and members must obey the requirements of the city and the State laws in every way, and for this reason any competitor violating the law will forfeit his right to win the cup.

The course is about seventy-six miles in length, and the start will be made from the new Bellevue-Stratford Hotel about 9:30 a.m. Rule No. 6 allows the contestant to select any of the several routes between controls, but he must report and be timed at Hotel Ambler, Ambler; Hotel Columbia, Phoenixville; Mansion House, West Chester, and at the finish at City Hall. An hour will be allowed for luncheon at Phoenixville, but contestants must have time of departure therefrom marked on their cards.

O. H. Chadbourne, who won the cup last year and now holds it, announces his intention of defending his title to the mug.

The event, being open to cars of all types and powers, is of course a handicap, but allowance will not be known by contestants until after the run is finished.

## ENGINEER'S RUN TO ARDSLEY.

### Novel Plan of A. L. A. M. for Acquiring Intimate Knowledge of Cars.

The engineers and mechanical superintendents of the automobile manufacturing concerns who are members of the Association of Licensed Automobile Manufacturers will hold a meeting in New York on October 7, the main object of which will be the formation of a society for the free interchange of ideas on the automobile manufacturing matters, and a rather novel arrangement will be carried out. Each company sending representatives will send one or two gasoline cars for the transportation of the members of the party, which will probably number about seventy-five. Thirty cars have been booked for the occasion.

The party will rendezvous at the Locomobile garage, Broadway and Seventy-sixth street, at 9 o'clock in the morning, and a run will be made up Riverside Drive to Van Cortlandt Park, Yonkers, Irvington and Ardsley, where luncheon will be served at the Ardsley Club, the party being the guests of some of the members. Afterwards the trip will be continued through White Plains to Travers Island, where the New York Athletic Club will entertain the members of the party. The return trip to New York will then be continued, and an informal dinner will be partaken of at the Casino, Central Park, at 6 o'clock. During the run the visitors will change about, and each man will ride in as many different cars as possible, so as to become more thoroughly acquainted with the results of his fellow-manufacturers' efforts. At the dinner in the evening the matter of forming a mechanical branch of the association will be discussed, the object of which will be mutual benefit and the general improvement of automobile manufacturing methods. If the proposed organization should be successfully launched, it is expected that its efforts will be concentrated mainly on decreasing the cost of operation and maintenance of motor vehicles, endeavoring to improve the tire situation and, as far as possible, standardizing automobile parts. The members of the association are said to have taken kindly to the idea and to be anxious to help it along as much as possible.

Attorney S. H. Watson is the first citizen of Lodi, Wis., to own an automobile.

## CURRENT NEWS FROM NEW YORK.

The 24-horsepower Fiat car driven by Paul Sartori at last Saturday's race meet at the Empire track, Yonkers, was a brand new car, just imported. It was taken from the customs house by Hollander & Tange-man at 12 o'clock Saturday, two hours before the hour scheduled for the races to start, the tonneau and touring equipment were removed, the tanks filled and the motor started. The car was then driven directly to the track. William Wallace, who will drive a 90-horsepower Fiat in the Vanderbilt Cup race, drove the machine around the track after the conclusion of the races.

The fall tour of the Automobile Club of America is an assured fact, says Emerson Brooks, chairman of the A. C. A. Touring Committee. The replies received from members to whom notices were sent have been most encouraging, and if only half of those who have declared their intention of making the trip actually start and carry it through the tour will be a success.

Automobile speeding on Broadway between Twenty-fourth street and Central Park is being held in check by special work on the part of the police. Besides the regular bicycle squad, a policeman mounted on a motorcycle has been placed on night duty on that stretch of asphalt, but the warning sounded by Commissioner McAdoo, to the effect that all scorches would be taken in at sight, seems to have been so effective that the "auto-catchers" have had a rather tame time of it.

The non-appearance of Jockey Tod Sloan as a racing chauffeur at the race meet at Yonkers last Saturday was caused by the arrest of that young man for speeding on Fifty-ninth street, New York. He was on his way to the races in his 40-horsepower Decauville, when the police got him. He arrived at the track later, having left his machine as bail for his appearance.

An automobile was put to good use recently when R. H. Stearn, manager of the Hotel Navarre, New York, while driving his car, saw a young man drink from a bottle of poison and fall to the ground in the Bronx. Mr. Stearn immediately took the would-be suicide into his car and made a fast run to the nearest police station, 2 1/2 miles away, where doctors were telephoned for. The young man was taken to a hospital. At last reports he was in a serious condition.

The Automobile Club of New Jersey met on the evening of September 22 and plans were made for holding its annual Eagle Rock hill-climbing contest on Thanksgiving Day. The classification of cars will be the same as last year—by prices—and special events for racing cars will be added to the programme. The growth of the club has made it necessary to secure regular quarters, and accordingly rooms have been secured on the corner of Railroad and Harrison streets, Brick Church, N. J., close to a large garage. The courtesies and privileges of the club will be extended to all visiting automobilists.

Among the recent purchasers of Fiat cars, through Hollander & Tange-man, New York agents, is A. Hartuppe McKee, of Pittsburg, Pa., who has placed an order for one to cost \$16,500 delivered in New York. The car is of the Berline de Voyage type, the body of which is ten feet in length and entirely enclosed, and has a seating capacity for nine persons. The seats on either side are so arranged that they can be made into

sleeping berths for long-distance travelling. Mr. McKee expects to use the car for European touring.

As an offset to the many remarks made regarding the unseaworthiness, unreliability, frailty and intricacy of the modern auto-boat, Smith & Mabley have issued a list of the events in which their boat, *Vingt-et-Un II.*, has taken part since June 11 of this year. It shows a total of eight victories for the season.

E. J. Willis has established an automobile exchange at 17 Park Place, New York, where Orient buckboards and tonneaus will be carried in stock and automobiles of all kinds be bought, sold and exchanged. The premises extend through the block from Park Place to Murray Street. Below the street floor are two other floors, which will be used for storage, and, later on, for a garage in which cars will be taken for "live" or "dead" storage. Work is now in progress to adapt the place to its new use, and a large freight elevator is being installed to connect the three floors.

Homan & Schultz, Broadway and Thirty-eighth street, Manhattan, have added to their automobile line the Marion car, built by the Marion Motor Car Co., of Marion, Ind. A machine for demonstration purposes is now being shown at their establishment.

## NEWS AND TRADE MISCELLANY.

The Consolidated Supply Company, of Denver, announces that it will remove from the present location to 1562 Broadway, Denver, on October 1. This move will place the concern right in the automobile district.

A. L. Dyke, formerly of the A. L. Dyke Auto Supply Company, St. Louis, Mo., has sold his interest in that concern and entered the automobile supply business on his own account, being temporarily located at 311 Pines street.

Henry Merrill, of the Kansas City Automobile Company, has leased a building one block south of his present quarters in McGee street for a term of five years. He will handle the White and the Rambler exclusively next season. He has already sold three 1905 Whites.

The License and Orders Committee of the Board of Supervisors at San Francisco decided on September 22 to recommend that the fares for public livery automobiles carrying not more than four persons be fixed at \$3 for the first hour, or fraction of an hour, and \$1 for each subsequent half-hour or fraction thereof.

The Peerless Motor Car Company will probably carry out its long-talked-of plan of erecting a large factory in Cleveland. Plans for this factory were prepared last year, but at the last moment it was decided to delay the matter another year. The company has a site at the corner of the Nickel Plate Railway and Quincy street, a short distance from the present plant, and it is stated that contracts for the buildings are to be let at once.

In all probability the Baker Motor Vehicle Company will have a new plant for next season. At the time the factory of the American Ball Bearing Company was built on the outskirts of the West End of the city the Baker company bought property adjoining that of the other company, which is owned by the same interests. It is probable that both factories will be pushed to early completion.

Postmaster Hibbard, of Boston, has invited bids of automobile owners for the contracts for transporting the mails between the central post office and the different railway stations, all bids to be in the hands of the Assistant Postmaster General, Washington, D. C., by December 1. Heretofore this service has been performed only by horse-drawn vehicles. The contracts are for a period of four years, dating from July 1, 1905.

The Bretton Woods, N. H., "Perfection" automobile tour is scheduled to come to a conclusion Saturday, October 1, with a banquet at the Mount Pleasant Hotel. Touring parties from New York, Boston, Providence, Springfield and Hartford were organized. A number of speakers, prominent in automobile affairs, are expected to be at the banquet. Among these are Winthrop E. Scarritt, Col. Albert A. Pope, and Samuel A. Miles.

With numerous accessions to the entry list from among the contestants at the Empire City Track races last Saturday, Secretary H. D. Le Cato, of the Motor Power Association of Philadelphia, announces well-filled events for next Saturday's meet at Point Breeze. The track will be scraped and sprinkled sufficiently to abate the dust nuisance without rendering it slippery. A number of local owners of fast cars will enter the amateur events.

The Michigan Automobile Company, Ltd., of Kalamazoo, reports that overtime work is necessary to keep up with orders. Its Model D light touring car is reported to be selling well. Agencies for this machine have been established with W. H. Whitesell & Co., 604 S. Broadway, Los Angeles, Cal.; Electric Supply Co., 309 Bull St., Savannah, Ga.; H. D. Clark, Jr., & Co., 217 E. 15th St., Kansas City, Mo.; and the Newark Automobile Co., cor. Wright and Brunswick Streets, Newark, N. J.

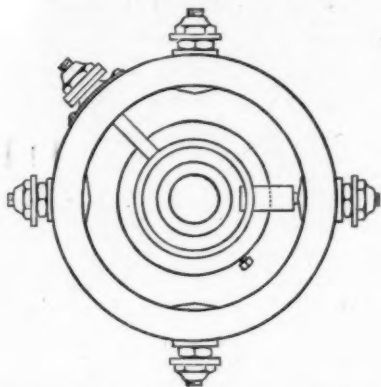
A 90-horsepower racing automobile is to be built by the Locomobile Company of America for Dr. Harold E. Thomas, of Chicago, at a cost of \$18,000. A four-cylinder 16-horsepower gasoline Locomobile, which Dr. Thomas has been using this season, impressed him so favorably that he ordered a 30-35-horsepower limousine car and a racing machine. The latter, which will resemble, in its general features the regular Locomobile touring car, is to be built from designs by A. L. Riker, and is the first purely racing gasoline car built by this company. The Locomobile Company states that it will not enter the racing field, and that anything done in this line will be by customers on their own account.

Instead of handling all sales through the main office, as heretofore, the Winton Motor Carriage Company has decided to divide the country into districts to be handled from the branch houses. All sales will go through the branches, and the branch managers will appoint agents in their territory. The company now has branch stores in New York, Boston, Philadelphia, Cleveland, Chicago and London, and it is the intention to establish several other branch houses whose locations have not yet been decided upon. It is understood that two, and perhaps three, Winton models will be built for the season of 1905, one of them to be a four-cylinder car to sell at a less price than the Winton cars of the past two or three years.



## INFORMATION FOR BUYERS.

**SPARK TIMER.**—The accompanying illustration shows an ignition timer manufactured by C. L. Altemus & Company, Harrison Building, Philadelphia, Pa. This timer is intended for use where it is desired to



ARTEMUS SINGLE COIL IGNITION TIMER. 3

use but one coil with a plurality of cylinders, and it is claimed that it gives a very hot spark with small battery consumption.

**AUTOMOBILE SUNDRIES.**—The Wm. H. Wiley & Son Company, Hartford, Conn., has issued a leaflet illustrating a few of the automobile sundries and specialties carried in stock and manufactured by that concern. These consist of tire, lamp and automobile covers, tool rolls, bags of various kinds, dust shields, engine covers or boots, leggings of

canvas and leather and other similar goods. Automobilists who like to keep their machines clean should be interested in the leaflet.

**JONES ODOMETER.**—Jas. W. Jones, New York, inventor and manufacturer of the Jones Speedometer, has completed an odometer which is actuated by a flexible shaft and gears in the same manner as the speedometer. The odometer is attached to the dashboard of the car in any convenient position. The driving gear, which is attached to the front wheel, is interchangeable, the size varying with the diameter of the road wheel. There is a swivel arrangement between the driving and the driven gear, so that if a stone or other object catches between the gears, they will swing apart momentarily instead of breaking. The odometer is supplied with a trip, by means of which the indicator may be set back when desired.

**FOR HANDLING GASOLINE.**—The storage of gasoline with the least possible loss by evaporation, with safety and convenience and in compliance with the insurance regulations, is the subject of a leaflet issued by Fred Kaltenbach, No. 11 North Jefferson street, Chicago, Ill. The outfits, consisting of tanks, pumps and connecting devices, made by Mr. Kaltenbach, are stated to be strong and serviceable, made of the most suitable materials, provided with safety appliances and sold at reasonable prices.

**STATIONARY GASOLINE MOTORS.**—The improvements made in the past few years in the construction of the explosive motor

have placed it in a class by itself as a source of power when economy of space and low cost of operation are considered; while in the matter of reliability and regularity of running a well-designed and carefully built gas or gasoline motor is hard to excel. The Greendale gas and gasoline engines are manufactured by a concern which has had a wide experience in the construction of steam engines; they are built to withstand hard work and lots of it, all parts being substantially made of the most suitable material. A special feature is that the gasoline tank is placed in the base of the engine, where it is entirely out of the way, and requires no extended system of piping, with joints and liability to leakage. On large sizes of these engines there is a patent friction drive, which automatically throws the load on and off at the proper time, so that the engine is always free from load for starting. These engines are manufactured by the Greendale Gas Engine Company, Worcester, Mass.

**FIRE PROOFING.**—A new method of flame-proofing wood is offered to automobile builders for body work. It is said to be permanent in its effect, to be rather beneficial than injurious to the wood so far as strength is concerned, to cause the wood to take paint better than untreated wood, and to preserve it from dry rot. The process was originally intended for building work, but there is apparently no reason why automobiles should not be constructed of fire-proof material throughout. Sulphate of aluminum is the agent employed. The process is known as the Ferrell Flameless Wood Process, and Yerkes & Dunwoody, 1,112 Witherspoon Building, Philadelphia, Pa., are selling agents.

**DRILL STAND.**—The Frasse Company, 38 Cortlandt street, New York, is marketing a combined drill stand and gauge that should appeal strongly to the automobilist who



FRASSE DRILL STAND AND GAUGE.

likes to have his own tools and to keep them in good condition. This stand, which is illustrated herewith, contains places for drills from No. 1 to No. 60, and each hole is made exactly to gauge and marked. This method of taking care of drills is a long way ahead of the too common method of letting them rattle around loose in an old cigar box, in which the one wanted is always the last to be found, no matter how big it may be.



JONES NEW DASHBOARD ODOMETER WITH FLEXIBLE SHAFT.

## INDEX TO ADVERTISERS

Acetylene Gas Illuminating Co.	39
Acme Motor Car and Repair Co.	37
Allyne Brass Foundry Co.	45
Altemus & Co., C. L.	50
American Automobile and Power Co.	37
American Ball Bearing Co.	48

American Coll Co.	39
American Darracq Automobile Co.	56
American Lamp Works	46
American Machine Mfg. Co.	39
American Metal Polish Co.	39
American Oak Leather Co.	48
American Veneer Co.	48
Audel & Co., Theo.	39
Anderson Mfg. Co., J. C.	47
Anderson & Sons, W. H.	45
Angier Co., The	38-39
Association of Licensed Automobile Mfrs.	65
Atwood Mfg. Co.	43
Auto Body Co.	63
Auto Car Equipment Co.	49
Automobile Supply Mfg. Co.	39

Auto Rebuilding Co.	63
Auto Supply Co.	43
Balder Motor Vehicle Co.	63
Bartholomew Co., The	62
Bay State Stamping Co.	38
Becker, John	38
Belle City Mfg. Co.	46
Biddle & Smart Co.	48
Bingham House	69
Black Diamond Automobile Co.	66
Bliss-Chester Co.	39
Blomstrom, F. H., Motor Co.	43
Borlein & Co., H. F.	42
Boston Automobile Exchange	44
Boston Gear Works	39

Bowser & Co., S. F.	44
Brennan Motor Co.	46
Briscoe Mfg. Co.	43
Brooklyn Automobile Co.	37
Byrne-Kingston Co.	62
Cadillac Automobile Co.	58
Central Automobile Co.	63
Chandlee & Chandlee	41
Chicago Battery Co.	60
Chicago Rawhide Mfg. Co.	42
Clark Carburetor Co.	49
Clark & Sons, A. N.	42
Columbia Automobiles	37
Construction of a Gasoline Motor Vehicle	58
Continental Caoutchouc Co.	52
Covert Motor Vehicle Co.	66
Custer Beam Works	41
Crane, George A.	37
Crest Mfg. Co.	64
Crucible Steel Casting Co.	45
Cullman Wheel Co.	39
Dayton Electrical Mfg. Co.	46
Detroit & Buffalo Steamboat Co.	43
Demmerle & Co.	35
Diamond Rubber Co.	55
Diamond Stamped Ware Co.	51
Dietz, R. E.	50
Dixon Crucible Co., Jos.	49
Dow Portable Electric Co.	39
Draper Bros. Co.	38
Duerr-Ward Co.	37
Dyke, A. L.	63
Eagle Oil and Supply Co.	42
Eldridge Electric Mfg. Co.	39
Electric Storage Battery Co.	47
Electric Vehicle Co.	62
Elmore Mfg. Co.	65
Erickson Mfg. Co.	39
Excelsior Supply Co.	38
Fast, Otto	49
Federal Mfg. Co.	45
Ford Motor Co.	64
Forg, Peter	45
Franklin Mfg. Co.	67
Frasse Co., The	38
Funke, A. H.	38
Gilbert Mfg. Co.	39
G. J. Tire Co.	51-53
Goodrich Co., The B. F.	54
Goodyear Tire and Rubber Co.	50
Gray & Davis	60
Grossman, Emil	50
Grout Bros. Automobile Co.	37
Hardy Co., The R. E.	47
Harris Oil Co., A. W.	41
Hartford Pattern and Model Co.	45
Hartford Rubber Works	Cover
Haynes-Apperson Co.	Cover
Herz & Co.	49
Hopson & Chapin Mfg. Co., The	45
Hotel Lenox, Boston	59
Hotel Lenox, Buffalo	59
Hotel Newman	59
Howarth & Rogers Co.	48
Induction Coil Co.	47
Jeffrey & Co., Thomas B.	Cover
Jersey Brake Co.	60
Jones-Corbin Automobile Co.	67
Jones Speedometer	64
Kaltenbach, Fred	48
Kells, W. J.	38
Knox Automobile Co.	70
Konigslow, Otto	41
Lackawanna Railroad	58
La Roche Co., F. A.	60
Lewis & Matthews Co., The	37
Levy & Co., Manassah	42
Light Manufacturing Co.	45
Lobee Pump & Machinery Co.	41
Locke & Co.	48
Locke Regulator Co.	39
Locomobile Co. of America, The	65
Lowell Model Co.	49
Manufacturers' Foundry Co.	45
Mason, Harvey & Co.	37
Matheson Motor Car Co.	Cover
McCord & Co.	38
Metropolitan Magazine	51
Meyerowitz, E. B.	39
Miller, Chas. E.	42
Moore & Son Co., M. E.	47
Morgan & Wright	40
Morgan & Harding	43
Moss Photo-Engraving Co.	56
Motor Car Equipment Co.	37
Motor Car Supply Co.	39-43
Motsinger Device Mfg. Co.	41
Munsell & Co., Eugene	39
Myers, A. J.	49
National Compounding Co.	38
National Motor Vehicle Co.	61

National Sewing Machine Co.	46
Northwestern Storage Battery Co.	47
Nuttall Co., R. D.	46
N. Y. & N. J. Lubricant Co.	39
Oakes & Dow	39
Ofeldt & Sons	38
Olds Motor Works	Cover
Ophthalmoscope Co.	39
Oriental Hotel	58
Packard Electric Co.	38
Pardee & Co.	37
Parish & Bingham Co.	50
Pederson, J. T.	44
Peerless Motor Car Co.	61
Pioneer Automobile Co.	37
Pioneer Brass Works	45
Pittsburg Reduction Co.	45
Premier Motor Mfg. Co.	63
Providence Steel Casting Co.	45
Quinby Co., J. M.	48
Randall, F. E.	37
Rattan Novelty Co.	39
Reading Metal Body Co.	48
Reid Mfg. Co., The	64
Riverside Body Factory	48
Rotary Motor Vehicle Co.	49
Royal Equipment Co.	38
Royal Motor Car Co.	65
Rushmore Dynamo Works	44
R. & C. Indicator Co.	42
Saks & Co.	36
Skat Mfg. Co.	38
Smith & Mabley	71
Snow, H. M.	37
Sommer Motor Co.	66
Spears' Sons Co., Alden	47
Splitdorf, C. F.	47
Springfield Hat & Cap Co.	38
Springfield Metal Body Co.	48
Springfield Moulding Works	39
Standard Automobile Co.	37-69
Steam Carriage Boiler Co.	43
Stitch-in-Time Vulcanizer Co.	42
St. Louis Motor Carriage Co.	63
Studebaker Automobile Co.	72
Synnestvedt Machine Co.	64
Tennant Auto Tire Co.	63
Thomas Motor Car Co., E. R.	64
Thorn Mfg. Co.	38
Timken-Roller Bearing Axle Co.	48
Torbenson Gear	46
Trebert Gas Engine Co.	49
Tucker, C. F.	38
Ulman, Henry J.	37
Union Automobile Co.	64
United Electrical Mfg. Co.	44
United Motor Corporation	37
Upton Machine Co., The	45
Upton Motor Co.	41
Utility Co., The	38
Van Husan & Farr Co.	60
Veeder Mfg. Co.	43
Vehicle and Implement Spring Co.	41
Waltham Mfg. Co.	49
Wayne Automobile Co.	61
Western Motor Co.	49
Weston Electrical Instrument Co.	43
Wheeler, F. H.	47
Wheelock Motor Car Clock Co.	38
Whitlock Coll Pipe Co., The	43
Whitney Mfg. Co.	45
White Sewing Machine Co.	62
Wiley & Son Co., W. H.	38
Willard Storage Battery Co.	47
Willis, E. J. Co.	46
Wilson & Hayes Mfg. Co.	38
Winkly Oil Co.	47
Winton Motor Carriage Co.	63
Worthington Automobile Co.	68

## SPECIAL NOTICES

Advertisements inserted under this heading  
at 20 cents per line; about 7 words make a line.  
Remittance should accompany copy. Replies  
forwarded if postage is furnished.

**DO YOU WANT MORE POWER?** \$4,000  
40-horsepower car for \$2,500 cash; run  
500 miles; equipped with 4-cylinder 5 x 6  
engine; 3 speeds forward and reverse; 104-  
inch wheel base, 34-inch wheels, 41-2-inch  
tires, Whitlock cellular cooler, searchlights,  
and everything up to date. Photo if interest-  
ed. Address Box 153, Springfield, Vermont, 1

**AUTOMOBILES—Bargains.** New York's greatest depot's first great unloading sale. Thirty-five automobiles consigned for quick sale have reached us within the past week. Machines have come to us from many points within 100 miles and also from Boston, Providence and Philadelphia. On every machine recently received we have owners to limit an exceedingly low price. Selling on 5 per cent. commission, we must sell fast to make money. No "Stickers" for us, and this week we start the greatest and liveliest automobile sale ever attempted. In slightly used cars we offer choice of all makes, some used less than three months. If out of 118 now here we cannot suit you, give up trying to be suited. More cars here than you will find with all other dealers combined. 30,000 feet of floor space covered gives you an idea of the great number you can select from. Choice from Electrics, Steam and Gasoline, from the big touring cars to dainty electrics for ladies. A number of special bargains will be found at our salesrooms. Write, call or telephone. Manhattan Storage Co., largest automobile dealers in the world, 334-340 West 44th St., New York City, 10 doors from 9th Ave, 2 blocks from 42d St. station of the 9th Ave. "L."

**OR SALE—Two Pierce Stanhopes, 1904 models.** For all details write Miller-Mundy Motor Car Co., Utica, N. Y.

**FOR SALE—One Towanda running gear,** complete, ready for power; tires new; Fish double tube. F. Herbst, Wilmington, N. C.

**FOR SALE—1904 Oldsmobile Runabout,** used some for demonstrating. Like new, for \$500. Address Frank Floding, Lorain, Ohio.

**FOR SALE—1902 Stevens-Duryea,** with Victoria top; in elegant condition. Price, \$850.00. Dr. A. L. Cooley, Chicopee Falls, Mass.

**FOR SALE—1902 Stevens-Duryea,** without top; perfect condition; price, \$750.00. Demonstration if desired. R. W. Magna, 248 Oak St., Holyoke, Mass.

**FOR SALE—Stanley steam runabout; red,** 1904 model; 16-in. boiler; large engine; like new; very fast; demonstration. A. M. MacWhinnie, Pawtucket, R. I.

**FOR SALE—"Premier" 4-cylinder, air-** cooled tonneau. Extra casing and tube. Intelligent operation. No time to use same. "Premier," care The Automobile.

**FOR SALE—1904 Elmore Tonneau or the** Elmore "Pathfinder." Only used a short time for demonstrating; like new; a snap at \$650. Address Frank Floding, Lorain, O. 1

**OR SALE—1904 16-hp. Double-cylinder** Opposed Touring Car, first-class condition. Wish larger car. H. W. Webb, 908 New Hayden Bldg., Columbus, O.

**FOR SALE CHEAP—White Steam Stan-** hope in excellent condition in every way; has been very carefully used, principally by ladies. Address "White Steam," care of The Automobile.

**FOR SALE—Two-cylinder vertical gasoline** engine 3 1-2 x 3 1-2; nearly new, with clutch and in good order; or would exchange for Mason Model C Engine. H. H. Fenn, 3 State St., Meriden, Conn.

**FOR SALE—Oldsmobiles, \$250 and upwards,** with top. Ramblers, Cadillacs, Fords, Waverley Electric, \$450, and other automobiles are guaranteed in splendid running condition. W. J. Riddell Automobiles, Des Moines, Ia.

**FOR SALE—Model L 1904 Rambler Tour-** ing Car; 16-horsepower; double cylinder opposed; complete with top and 4 lamps; perfect condition, \$1,150. Has been run by an experienced man several months only. Want larger car for 1905. W. W. A., care The Automobile.

**FOR SALE—Rebuilt model "A" Cadillac** Tonneau; 81-inch wheel base; French brass-trimmed hood; new 3 1-2-inch G. & J. rear tires; 3-inch front brass rails; baskets; clock; 2 dash; 1 tail, 1 large gas head light, tubular horn; run 300 miles; looks like new, and so perfect I will guarantee for one year to careful buyer; cost \$1,155; sell for \$750 cash; would exchange for '02 or '03 Winton; send for photo. W. J. Pursell, 1530 College Ave., Indianapolis, Ind.

(Continued on Page 36.)